

RECREATIONAL SPECIALIZATION AMONG VISITORS
TO GROS MORNE NATIONAL PARK

CENTRE FOR NEWFOUNDLAND STUDIES

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**RECREATIONAL SPECIALIZATION AMONG VISITORS
TO GROS MORNE NATIONAL PARK**

by

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A thesis submitted to the School of Graduate Studies
in partial fulfilment of the
requirements for the degree of
Master of Arts

Department of Geography
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ABSTRACT

This study uses the concept of specialization to examine visitors' activities in Gros Morne National Park Reserve, specifically those using the backcountry. An index of activity specialization was created employing generic indicators in an attempt to differentiate among backcountry visitors and between backcountry and frontcountry visitors. Visitor characteristics are described. Preferences for environmental attributes and levels of support for park management strategies by different visitor sub-groups are discussed.

Questionnaires were distributed to visitors who registered for overnight stays in the backcountry during the summer of 1990 and to visitors who stayed at the 'frontcountry' Green Point campground during the months of July and August, 1990.

Backcountry visitors are socio-demographically different from Green Point visitors, but are not different in terms of overall activity specialization scores. Differences in hiking specialization and camping specialization were noted between visitors who chose to recreate in different settings within the park. Visitors to untrailed backcountry were more highly specialized hikers than visitors to trailed backcountry, who were more highly specialized hikers than visitors to the frontcountry campgrounds. The reverse pattern was the case for

camping specialization. Generally visitors who participated in activities other than hiking or camping had higher specialization scores.

The specialization index used in this thesis is not a practical tool for park managers. More useful information about park users was obtained from examining visitor comments and by classing visitors into groups based on the park area in which they stayed overnight. Visitors to the untrailed backcountry were found to have similar environmental preferences to visitors to the trailed backcountry with the exception of a stronger preference for physical challenge. Visitors to the trailed backcountry were found to have similar levels of support for management options which include facilities to visitors to the frontcountry.

Management strategies favored by all visitor groups include the provision of more and better information and interpretation via staff, maps and brochures.

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1.0 INTRODUCTION

The population of the world continues to increase and change and so too does the demand on the world's resources. How we define and allocate these resources is different now than in the past and will continue to change into the future. The management of resources has become more complex as technological change has redefined our needs for resources and increased the potential for leisure in more developed countries. This technology has expanded both our ability to access resources previously unattainable and our ability to damage essential resources such as air and water. Increased educational levels and the mass media have raised awareness of this damage and the threat to less tangible resources such as wilderness (Dearden 1994).

Two themes in modern resource management are conflict and uncertainty (Dearden 1994, Mitchell 1991, Jackson 1989). Conflict is created when different cultural systems, which are incompatible to some degree, have different resource values for the same resource. For example, members of the logging industry value trees for timber and employment; other groups value trees for oxygen production, wildlife habitat, and provision of recreational settings. Uncertainty exists when decisions must be made within the context of a rapidly changing biophysical and sociocultural environment and the decision makers lack adequate knowledge or understanding (Mitchell 1991). Decisions must be made now with little certainty of what impact they will have on the future and no certainty of what impact future conditions will have on decisions made

today. Resource management is the imperfect art of choosing the best apparent solutions to a large and complex set of problems based on current knowledge of people's needs now and into the future.

The focus of this thesis is the management of outdoor recreational resources within the context of the Canadian National Parks system. Over the past few decades, competition for resources for recreational use has increased tremendously which has led to conflict between groups with different resource interests. Conflict also exists within groups with seemingly similar interests. Recreational users of the natural environment often differ in the degree to which they wish to see the environment modified in order to provide access and meet special needs. One facet of reducing conflict is to reduce the uncertainty over resource supply and demands. This conflict between perceived recreational needs is very apparent in Canada's national parks. National parks policy requires the Canadian Parks Service to protect the environment while real-life demands challenge CPS to also meet the diverse recreational needs of a growing population with increased leisure time. Although the CPS mainly caters to "wilderness" forms of recreation, there is a diversity of types of recreationists and the management styles they prefer (Rollins and Rouse 1992). The purpose of this thesis is to provide information about the needs of different groups of recreationists within the recreational resource setting of one Canadian national park.

This chapter continues with a review of recreational resource management within the Canadian Parks Service (CPS) and concludes by stating the objectives of this study.

1.1 Recreational Resource Management and Canadian National Parks

The concept of recreational resources emerged as society, especially in North America, began to place an increasing value on recreation (Wall 1989). A recreational resource is any man-made or biophysical element in the environment which is perceived to provide an opportunity to satisfy recreational wants (Kreutzwiser 1989). For example, a cliff face with an updraft has no resource value until sought out by hanggliders who value the recreational opportunity it provides. Attention to defining such recreational resources grew as outdoor recreation boomed in the 1950's, and has continued to grow since that time.

Recreation has become a major North American industry which is constantly presenting the public with new ideas and products. Rivers, for example, long perceived as resources for anglers, have recently become recreational resources for a growing number of people, including rafters, kayakers, jet boaters, windsurfers, scuba divers and weekend inner tubers. There are now many potentially conflicting uses of the same resource. Similarly, over the last few decades wilderness and natural areas have been valued resources for

many participants in outdoor recreation. Competition with other resource users for these areas has become fierce, particularly as wild spaces become increasingly scarce (Hummel 1989).

One way in which society has tried to protect recreational values of natural areas is through park designation. Provision of recreational opportunities is, however, just one of the roles that parks fulfil, and there has been a changing emphasis in the role of parks over time (Dearden and Rollins 1993). Nelson (1993) identified at least twelve different functions and Eagles (1993) lists six ecological functions fulfilled by parks and other protected areas. However, most park mandates focus on some combination of recreational use and conservation of the natural environment. In Canada, parks at the municipal, provincial and national levels emphasize different proportions of these two elements. Currently, municipal parks tend to emphasize recreational use; provincial parks try to balance the two; and national parks tend to emphasize the conservation of significant natural areas. This emphasis on protection in the national parks was not always present. Early motivations for designating national parks focused more on the development of tourism markets and the exploitation of Canada's scenic natural features (Bella 1987, McNamee 1993).

McNamee (1993) described the evolution of the Canadian national parks system beginning in 1885 with the establishment of Banff hot springs reserve, Canada's first national park. Throughout the history of Canada's parks, the

critical role of politicians and conservationists has been evident. The first national parks were created in western Canada as part of Prime Minister John A. MacDonald's policy of national economic development. Multiple-use parks contributed to the nation's economy by producing profits from tourism and controlled natural resource extraction. J.B. Harkin, the first commissioner of the Dominion Parks Branch, greatly influenced the history of Canada's national parks. He was responsible for increasing the number of parks from five to sixteen, creating parks in eastern Canada as well as western Canada and prohibiting resource extraction activities (McNamee 1993). His beliefs, that people required parks as a refuge in which to rejuvenate by experiencing nature and beauty, and that Canadians had a responsibility to future generations to set aside wildlands before civilization invaded them, were included in the wording of the National Parks Act passed in 1930 and are reflected in today's parks policy. However, in order to gain support for the establishment of these new parks, Harkin also promoted the value of parks in attracting tourism and supported the development of recreational facilities, including living accommodation, roads for automobiles, and trails allowing easier access to natural attractions (McNamee 1993). In developing the recreational potential of national parks, Harkin unintentionally sowed the first seeds of the eventual deterioration of the lands he wished to preserve. Harkin resigned in 1936.

Only two new parks were established between 1936 and the appointment of the Hon. Jean Chretien to the National Parks portfolio in 1968. Chretien was influential in the establishment of a natural regions system plan which would guide park expansion activities to include representation of each of 39 natural regions within the national parks system and was responsible for the establishment of ten new parks which included the first national parks in northern Canada (McNamee 1993). However, Chretien's plans to complete the national park system by 1985 were slowed by local opposition to federal proposals for new parks. This opposition was mostly due to the government policy to expropriate lands within the proposed boundaries. During the negotiations surrounding the establishment of Gros Morne National Park Reserve in Newfoundland, the Canadian government modified its approach in dealing with local people. In this instance, local residents were allowed to live in community enclaves within the park area but outside of the park boundaries and were permitted to continue to cut firewood and snare rabbits for domestic use within the park. Resistance by local communities to the establishment of new national parks raised awareness regarding the social impact of park designation on local residents (Keough 1989) and brought about changes to national parks policy. These changes include: allowing local traditional use of resources, providing bilingual staffing, not expropriating private lands, ensuring local support for the proposed park. In the case of aboriginal resistance, the

National Parks Act was amended to permit native people to hunt, trap and fish in northern national park reserves until such time as aboriginal land-claims were settled (Berg *et al.* 1993, McNamee 1993).

Public support for parks led by non-governmental organizations (NGO), such as the National and Provincial Parks Association of Canada (now the Canadian Parks and Wilderness Society), and the resulting pressure on government have also been strongly influential in shaping the history of Canada's parks system (Dearden and Berg 1993). The recent growth in public awareness of issues concerning environmental degradation and the increased popularity of concepts like 'sustainable development' has created the current trend emphasizing the importance of parks as basic elements in regional conservation and development strategies (Nelson 1991).

1.2 Park Management

Eidsvik (1985) illustrates the evolution of park management concerns over time (see Figure 1.1). Early concerns focused on the establishment and protection of park boundaries which were created to protect natural features, such as the Banff hot springs, from private development. Managers focused on protecting the park lands within the boundaries and wildlife from extra-park influences such as poachers. However, after World War II, extra-park influences of another kind began to have an affect on park management.

The circles represent the growing size of the protected-area system over time. Boundaries (circle circumferences) were initially of little importance, but assumed greater significance in the protection and management phases. It is now realized that park management (arrows) to be effective must also pay equal attention to environmental changes outside park boundaries.

Scientific and Management Complexity

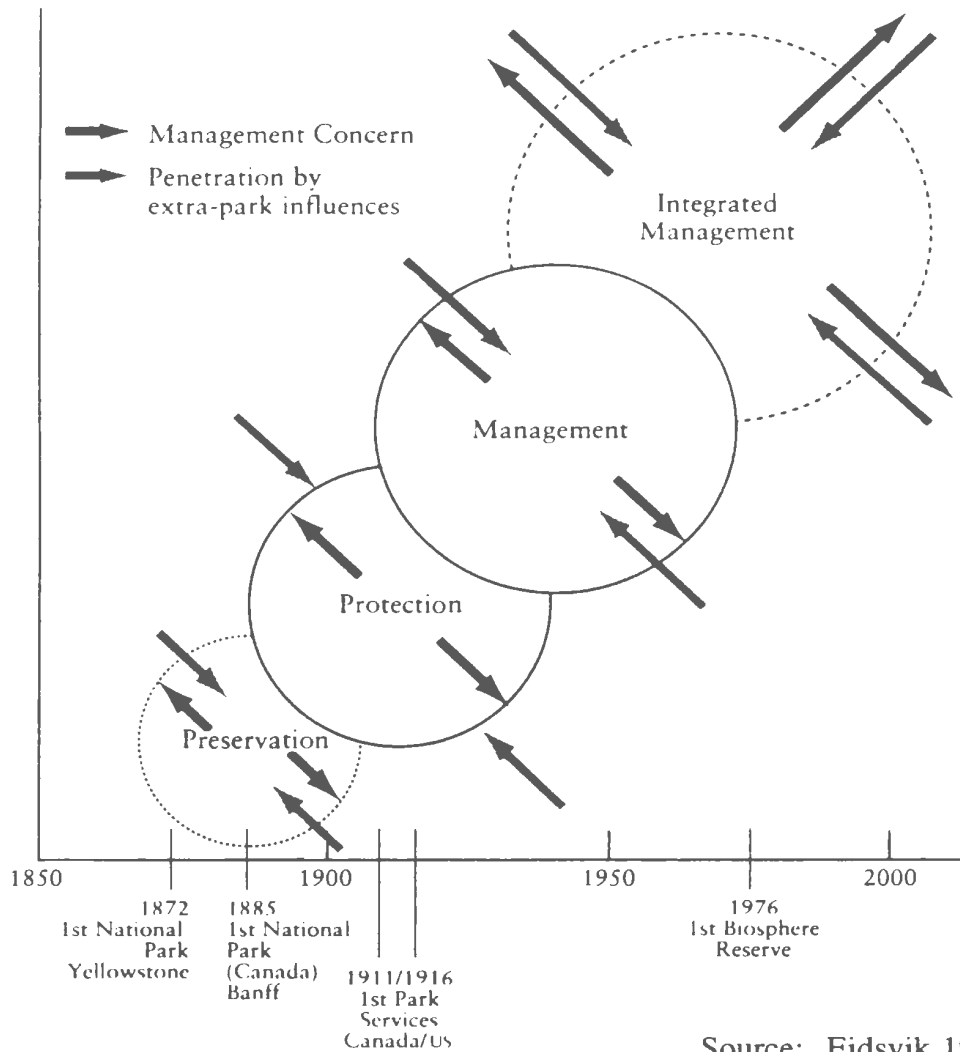


Figure 1.1 The Evolving Role of Parks: From Isolation to Integration

In the 1960's managers began to realize that demands for recreation were causing problems. The emphasis then became how best to handle large numbers

of visitors, and techniques such as internal park zoning originated. In Canadian national parks, areas were designated one of five types of zone depending on the sensitivity of the environment to visitor impacts. These zones ranged from Zone 1- Special preservation for unique or endangered features where access is strictly controlled to Zone 5- Park Services where visitor services and facilities are provided. Within Zone 5, park management focused on providing and maintaining visitor facilities (Parks Canada 1983). The zoning technique was relatively successful in protecting natural features from indiscriminate visitor use. However, zoning within park boundaries was limited to dealing with internal threats, and, because the emphasis was on regulating visitors, it was also limited in promoting visitor understanding, appreciation and enjoyment (Rollins 1993, Graham *et al.* 1987).

By 1976, when the first Biosphere Reserve was established, park managers had recognized that parks had become "...islands in a sea of change." (Dearden 1991) and that management concerns extended beyond parks' boundaries to include external threats such as water and air pollution and the poaching of animals whose ranges went beyond park boundaries (Rollins 1993). Park management models have evolved to what is currently termed the integrative or ecosystem management approach. This model recognizes a need to establish strategies for both global and local levels in order to preserve special areas and to maintain sustainable development (Dearden 1991).

Although there is no clear definition of what is meant by ecological integrity, in fact there is considerable discussion in the scientific literature on this topic (e.g., Woodley 1993 and Grumbine 1994), the concept of ecological integrity was identified in the 1988 amendment to the Canadian National Parks Act. The National Parks Act specifically makes ecological integrity the primary objective of national parks and requires that park management plans be reviewed every 5 years (Parks Canada 1994, Rollins 1993, Nelson 1991).

In early 1994 a new policy document was published. The major difference between it and the previous policy was the articulation of ten guiding principles. This new policy with its principles was important in fleshing out the national parks legislation in terms of the designation and management of national parks.

The recently published Parks policy states,

Ensuring commemorative integrity and protecting ecological integrity are always paramount values in applying these principles as well as the more detailed activity policies (Parks Canada 1994:16).

The first of the ten guiding principles of the policy specifically recognizes that,

...these places [parks] are not islands, but are part of larger ecosystems and cultural landscapes (p.16).

and establishes that

Protecting ecological integrity and ensuring commemorative integrity take precedence in acquiring, managing, and administering heritage places..." (p.16).

Recent attempts to meet the goals implied by ecological integrity have been accompanied by more comprehensive approaches to visitor management that recognize park managers need to do more than operate park facilities and enforce regulations in order to successfully fulfil the obligations of the National Parks Act (Graham *et al.* 1988). Five of the ten guiding principles setting out the key elements of the National Parks Policy articulate the ways in which the Canadian Parks Service will interact with visitors and local communities.

Principle four stresses the importance to the long-term success of the national parks system in providing services such as outreach education and interpretation that promotes an understanding and appreciation for park objectives within and outside of park boundaries (Parks Canada 1994). Principle five recognizes that "People and the environment are inseparable." and that traditional use of the environment must be presented as part of the natural history of an area (Parks Canada 1994:17). Principle six acknowledges the importance of social science and local knowledge in supporting management decisions and principle eight acknowledges the importance of public involvement (Parks Canada 1994).

Most important to the current study is principle seven which states

Opportunities will be provided to visitors that enhance public understanding, appreciation, enjoyment and protection of the

national heritage and which are appropriate to the purpose of each park...(Parks Canada 1994: 18).

The Parks policy outlines in more detail how visitor use will be managed in section 4.0 (Parks Canada 1994). Specifically, in section 4.1, it refers to the Visitor Activity Management Process and defines "appropriate activities" as those

...which promote the appreciation of a park's purpose and objectives, which respect the integrity of the ecosystem, and which call for a minimum of built facilities..." (Parks Canada 1994:37).

The policy discusses interpretation and public education in section 4.2; it describes the types of visitor services and facilities which will be provided in section 4.3; and it describes access and visitor accommodation in sections 4.4 and 4.5.

Thus, despite the new emphasis on ecological integrity, considerable emphasis is still placed on visitor management. However, the attention currently given to visitor management differs from that previously accorded it. Visitor management used to emphasize the provision, operation and maintenance of facilities, but the current emphasis is on providing visitors with diverse opportunities for experiencing the park which minimize the provision of facilities within the park. For example, the new policy specifically prohibits the construction of new golf and ski facilities as they are not considered appropriate in a national park (Parks Canada 1994). Several frameworks have been

developed over the recent past to help guide more sophisticated management in wilderness areas. The next section reviews four of the most commonly used frameworks and indicates their relative areas of strength.

1.3 Visitor Management and Parks

The issue of visitor management in parks emerged as a major concern when the number of visitors rapidly increased in the 1960s and began to have an impact on the natural environment. Payne and Graham (1993) identified three management problems associated with increased visitor use. The first problem is concerned with "sheer popularity" (p.185). Natural places sustain damage because of the number of people who want to see them; a case of people loving parks to death (Dearden 1985). A second concern for managers is encounters between animals and people. Increased numbers of people in parks plus decreasing habitat outside of parks means an increased likelihood of contact which is potentially hazardous for both parties. The third problem relates to conflicts between people. Research suggests that park visitors have different motivations and interests which are not always compatible (Bryan 1979, Jacob and Schreyer 1980, Jackson and Wong 1982, Manning 1986).

Park managers in the 1960's, trained mostly in natural science and wildlife management, developed the concept of recreational carrying capacity which extended the idea of carrying capacity used to determine, for example, how

many animals could graze in an area before the area could no longer support them (Hendee *et al.* 1990, Shelby and Heberlein 1986). Similarly, recreational carrying capacity was concerned with determining how many recreational users could be accommodated in a particular area before unacceptable degradation occurred in the physical and the social environment (Hendee *et al.* 1990, Manning 1986).

Weaknesses of the concept of recreational carrying capacity include the implication that there is an actual ideal number of visitors for any particular area that can be technically assessed and that limiting use to this ideal number by regulating visitors will solve all visitor management problems. However, regulation of visitors has not been an entirely satisfactory solution. Many problems are not so much a problem of numbers (which regulation can control) but a problem of behavior (Hendee, Stankey and Lucas 1990). Further, regulation does not effectively deal with handling people who wish to enjoy the attributes for which the park was established (Payne and Graham 1993).

The focus of visitor management is to understand visitors and the issues surrounding recreation needs and conflicts and to employ indirect as well as the more familiar direct management strategies. So, rather than depending too heavily on regulation (e.g., zoning, rationing use, restricting activities and law enforcement) as a management tool, managers can try other indirect methods (e.g., facility design and information dispersal) to attain management objectives.

This softer approach to management may provide a more satisfactory solution to visitor management than using regulation alone since people generally oppose regulation (Anderson and Manfredo 1985). If use restrictions are required for the protection of a natural area, providing information explaining the direct action has been found to be more acceptable to visitors (Anderson and Manfredo 1985).

Visitor management issues such as crowding, density, motivation and satisfaction are more complex than deciding on an ideal number; they involve value judgements (Hendee *et al.* 1990, Manning 1986). For example, who decides how many is too many? Different areas can support different numbers of people depending on what degree of change is considered acceptable. However, people often have conflicting ideas about what is acceptable.

The behavioral approach to studying outdoor recreation attempted to improve understanding of several recreation management issues such as substitutability, recreation conflict and the link between motives, settings and activities (Manning 1986). This approach recognizes four levels of demand for outdoor recreation: the demand for activities, such as wilderness hiking; the demand for settings in which activities take place, such as rugged terrain with few people; the demand for experiences derived from the activity and setting, such as challenge; and finally, the demand for benefits which result from

satisfying experiences, such as increased self-esteem (Driver and Brown 1978, Haas *et al.* 1980, Manning 1986).

Manning (1986) described ten principles that emerge from the behavioral approach to managing outdoor recreation:

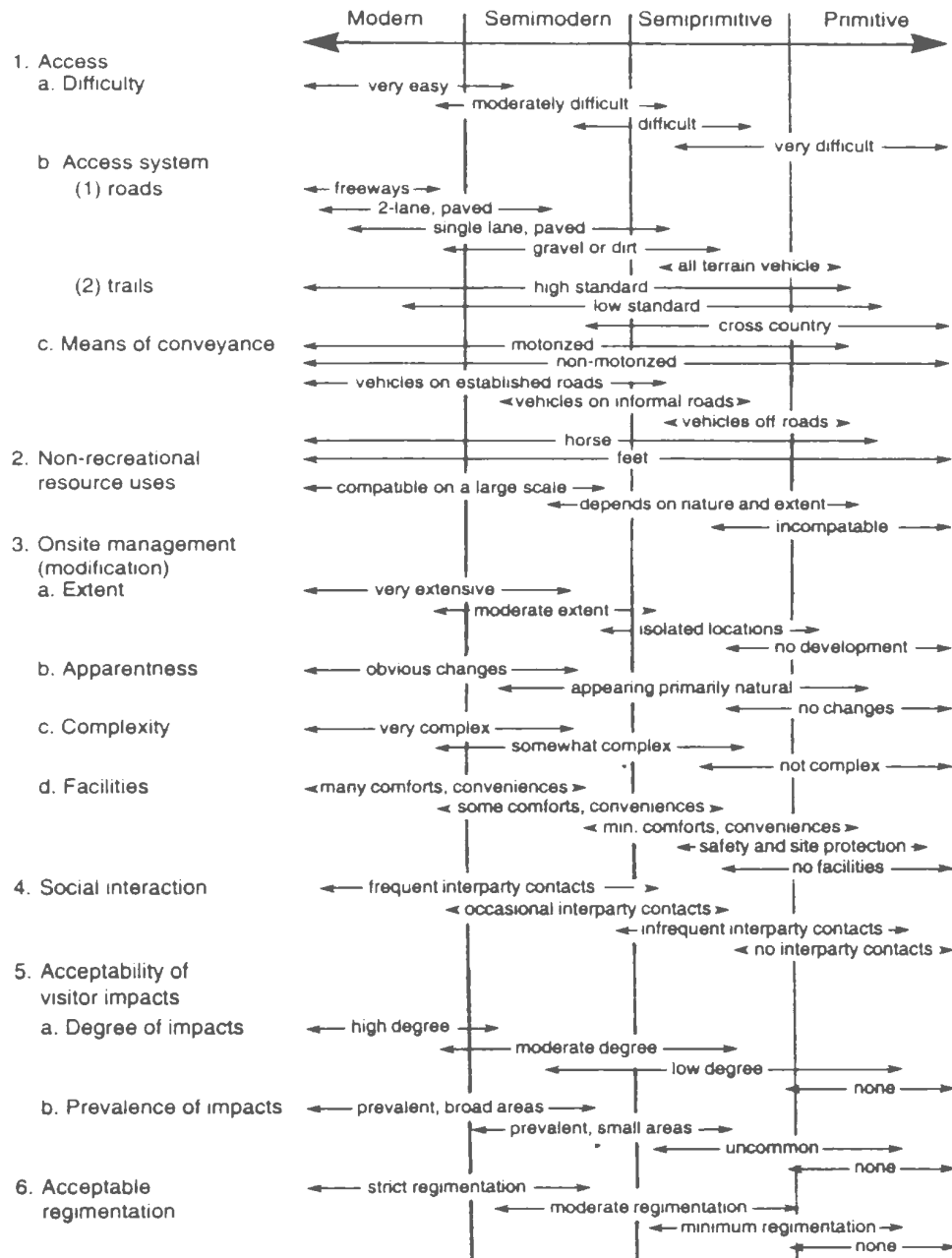
- 1) Outdoor recreation management should be considered within a three-fold framework of concerns: the natural environment, the social environment, and the management environment.
- 2) There is great *diversity* in public tastes for outdoor recreation.
- 3) *Diversity* is needed in outdoor recreation opportunities.
- 4) Explicit objectives are needed to guide management of outdoor recreation.
- 5) Satisfaction of visitors to outdoor recreation areas is a multifaceted concept.
- 6) Outdoor recreation is more appropriately defined in terms of fulfilling motivations than participation in activities.
- 7) Quality in outdoor recreation is the degree to which opportunities satisfy the motivations for which they are designed.
- 8) Differences in the perceptions of outdoor recreation visitors and managers require a concerted effort to obtain systematic and objective information about and from visitors
- 9) Outdoor recreation opportunities should be managed for relatively *homogenous* groups of visitors.
- 10) A variety of practices is available for managing outdoor recreation (Manning 1986:119-121 emphasis added).

Some common themes which are pertinent to this study include the idea of diversity and the idea of classifying visitors into homogenous groups. Four visitor management frameworks have been developed which incorporate these principles and attempt to aid managers to integrate social science input with previously existing management plans: the Recreation Opportunity Spectrum (ROS) (Clark and Stankey 1990, Driver 1990); Limits of Acceptable Change

(LAC) (McCool 1990, Stankey *et al.* 1985); Visitor Impact Management (VIM) (Graefe 1990); and the Visitor Activity Management Process (VAMP) (Tayler 1990, Graham 1990). Each will be discussed in turn.

1.3.1 The ROS Framework

The ROS framework was developed by the U.S. Forest Service to meet the mandate for outdoor recreation management and integrated resource management in U.S. national forests. The ROS framework focuses on providing diverse recreation opportunities by describing a range of recreation settings. These settings are defined by six manageable factors which may be placed along a series of continua ranging from modern to primitive (Figure 1.2) (Clark and Stankey 1979, Hendee *et al.* 1990, Payne and Graham 1993). By manipulating these factors, for example closing the only road into an area, the type of activity and experience available to visitors is changed (Payne and Graham 1993). By describing areas in terms of these factors a map of opportunity classes is produced and visitors can choose the area which will provide a satisfying experience for them. It is essentially a kind of zoning system.



Source: Clark and Stankey 1979

Figure 1.2 The Recreation Opportunity Spectrum

The ROS framework is rational and holistic. It depends on formal scientific data to set goals, to select a best alternative for achieving the goal, and

to monitor the result (Graham 1990). One of its strengths is that it enables managers to identify a wide range of recreational opportunities. However, its rational approach does not permit much public input which is desirable and often required, especially in managing national parks. Although it was developed to accommodate non-recreational uses such as logging, this framework has been used by organizations which do not allow resource extraction. The CPS has used ROS in several national parks (Payne and Graham 1993).

1.3.2 The LAC Framework

The U.S. Forest Service also developed the Limits of Acceptable Change (LAC) framework to aid managers to set standards for wilderness areas (Payne and Graham 1993). LAC was the result of a growing dissatisfaction with the concept of 'recreational carrying capacity' (McCool 1990).

In contrast to the approach of managing visitors based on *how many* visitors, LAC is a nine-step system (Figure 1.3) which allows managers to identify desired social and resource conditions by using specific measurable indicators, to take actions to maintain or restore these conditions to a set standard, and to monitor and evaluate the effectiveness of these management actions over time (Stankey and McCool 1990).



Source: Hendee, Stankey and Lucas 1990

Figure 1.3 The Limits of Acceptable Change Framework

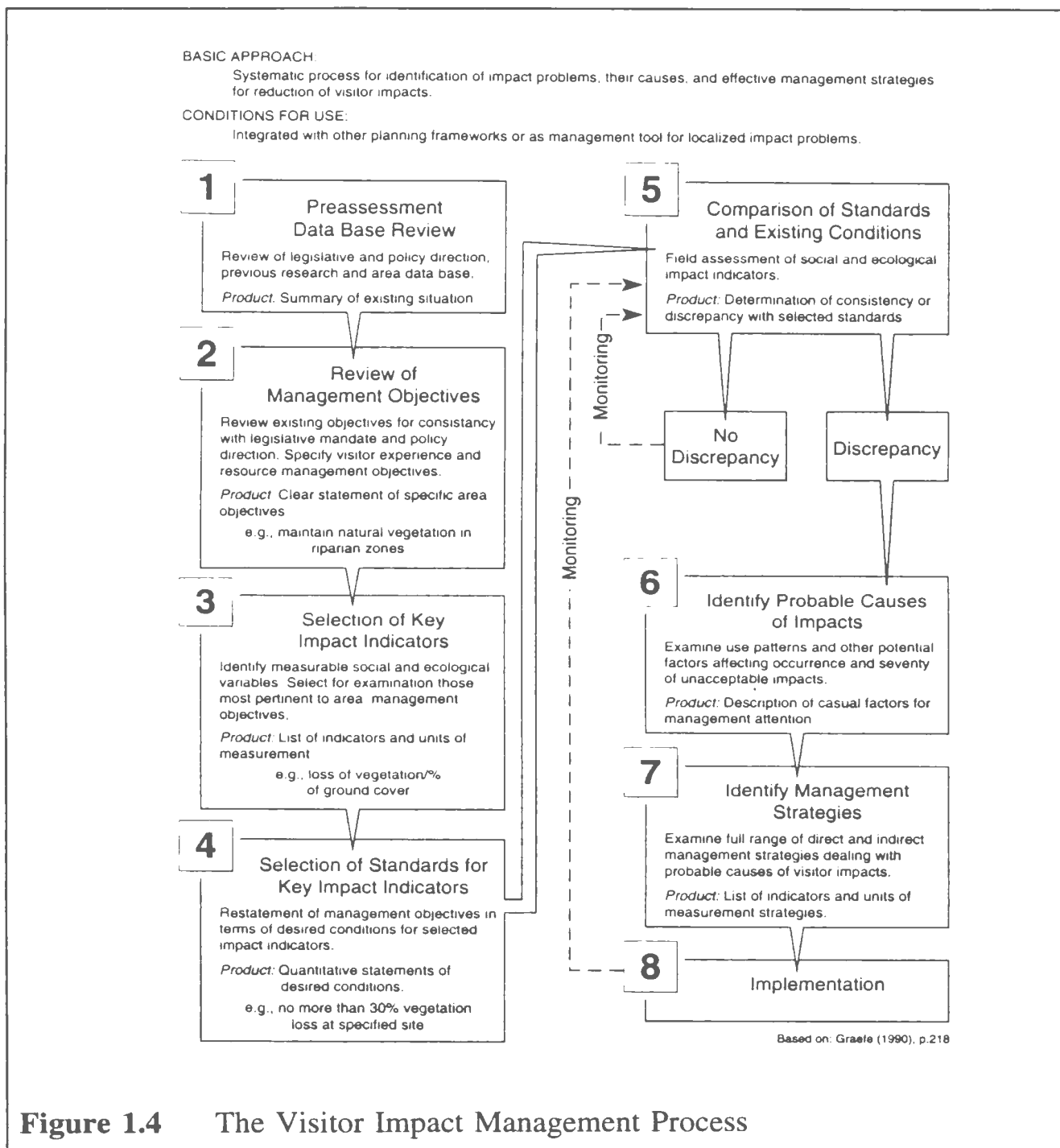
One strength of LAC is its recognition that management decisions are value judgements about what constitutes acceptable change in an area given the reality that any amount of use will have some degree of impact on the physical and social environment. Another key feature of LAC is its use of *transactive planning* which recognizes the importance of input from stakeholders, that is, anyone who is effected by management decisions, in determining appropriate conditions. This consensus approach is desirable in terms of public acceptance of decisions, but requires agencies to share power. This may lead to resistance by managers in applying LAC and also creates the potential to get bogged down

in bureaucracy. LAC has been used by the CPS in certain park areas (Krys and Anderson 1992 in Payne and Graham 1993).

1.3.3 The VIM Framework

The Visitor Impact Management (VIM) framework, like LAC, originated out of dissatisfaction with recreational carrying capacity. Unlike LAC, it was developed by the National Parks and Conservation Association, an NGO, in cooperation with academic researchers. It was designed as a problem-solving tool to aid managers of parks and protected areas to manage the impact of visitors on natural areas and on other visitor experiences. In many ways the eight step VIM process (Figure 1.4) is similar to LAC. However, the early steps of VIM give more emphasis to agency legislation and policy (Payne and Graham 1993).

VIM produces an action plan which provides solutions for specific problems at particular sites. In its application VIM is reactive rather than proactive. It is not as concerned with understanding the diversity of visitor needs and preferences and treats visitors as the source of problems (Payne and Graham 1993).



1.3.4 The VAMP Framework

The Visitor Activity Management Process (VAMP) framework was developed by the Canadian Parks Service in response to concerns about the

effectiveness of visitor services and interpretation (Tayler 1990). Rather than focusing on opportunities or impacts, VAMP focuses on identifying visitor activity profiles (Tayler 1990). These profiles link activities with the social and demographic characteristics of participants, with the activity's setting requirements, and with trends affecting the activity (Payne and Graham 1993). One strength of VAMP is that activity profiles allow managers to assess activities in terms of park policy objectives, that is, are certain activities, such as competitive skiing, appropriate? Visitor activity profiles also allow managers to assess activities in terms of the services and facilities that they require and whether these can best be provided within the national park or elsewhere.

As illustrated in Figure 1.5, VAMP was designed to complement the existing Natural Resources Management Plan (NRMP)(Graham *et al.* 1988). Established in 1978, the NRMP was developed to aid the understanding and management of natural and cultural resources at a site and continues to fulfil this function, whereas VAMP contributes social science input into the total park planning process. Together the NRMP and VAMP contribute to decisions regarding which proposed parks will be established as national parks (parks systems planning) and, once established, how park policy will be implemented (park management planning).

1.4 Implementing VAMP at Gros Morne National Park Reserve: The Service Planning Process

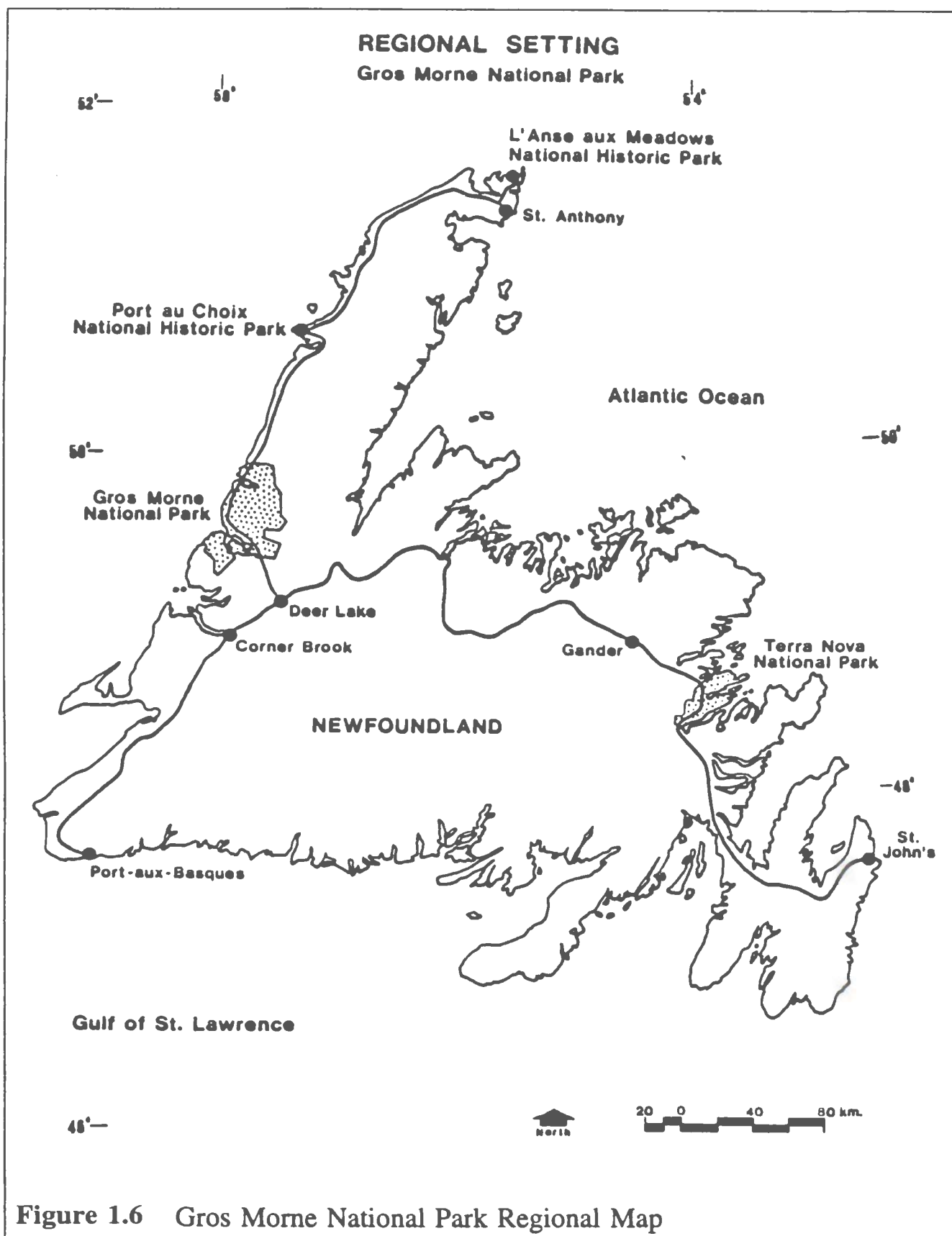
There are four possible management contexts within which VAMP will be implemented: 1) new park proposals; 2) established parks without park

management plans; 3) established parks with a park management plan developed without VAMP input; and 4) established parks with park management plans developed with VAMP input (Graham, Nilsen and Payne 1988). Gros Morne National Park Reserve falls into the third category; in 1984 the Gros Morne NPR Management Plan (without VAMP input) was approved (Canadian Parks Service 1990).

Gros Morne National Park Reserve was established in 1973 and is situated along the west coast of Newfoundland between the latitudes 49° 16'30" N and 40° 58'30" N (Figure 1.6). It represents 1943 square kilometres of the Western Newfoundland Highlands which includes several different physiographic regions.

Among the distinguishing features which led to Gros Morne's designation as a Canadian National Park Reserve are: the Tablelands, composed of the nutrient-poor/ magnesium-rich peridotite which retards plant growth and produces its dramatic 'moonscape' terrain (Dearden 1979); Western Brook Pond, Bakers Brook Pond, Ten Mile Pond and Trout River Pond, all spectacular fjords now cut off from the sea by the emerging coastal plain; and the Long Range Plateau, an arctic-alpine environment which is the habitat of woodland caribou, moose, arctic hares and ptarmigan (Environment Canada, Parks Service 1991b).

In recognition of Gros Morne's outstanding natural and cultural features, the UNESCO World Heritage Convention proclaimed Gros Morne one of ten Canadian World Heritage Sites in 1987.



One of the reasons for Gros Morne's worldwide significance is its rocks of Precambrian, Cambrian, and Ordovician age and the evidence that they offer for the theory of Plate Tectonics...The decision to include the park in this exclusive group also took into account Gros Morne's spectacular glacier-carved scenery, its mix of arctic and boreal plants and animals, and its 4,500 years of human habitation (Environment Canada 1990:9).

The strategy for implementing VAMP in existing parks is focused on the development of service plans (Graham *et al.* 1988). A handbook titled Getting Started: A Guide to Service Planning (Environment Canada 1987) was produced in order to assist park managers with this task. This handbook discusses the importance of visitor segmentation, that is, dividing visitors into homogenous groups with identifiable patterns of use, needs and expectations (Tayler 1990). To simplify the process and bring the focus to the individual park level, these groups were based on the observable "what people do" rather than "why people come" and were called Visitor Activity Groups (VAG) (Tayler 1990). After VAGs were identified, the next step in the Service Planning Process was to develop a profile or "thumbnail sketch" of each VAG, which included descriptions of the activity, characteristics of the visitors and some idea of the type of experience sought by the group (Figure 1.7) (Tayler 1990).

During the design stage of this study, Gros Morne NPR was expected to have its service plan completed by February 1992, prior to the management plan review scheduled for 1992 (pers. comm. Lorne Logan). The Service Planning

VISITOR ACTIVITY GROUP PROFILE

Visitor Activity Group: (title)

Definition:

Activity Description: (setting, timing, skills and equipment required)

Market Characteristics: (origin, age, education, party size and type)

Benefits and Experience Sought: (setting, motivation, style of visit)

Activity and Service Requirements (from a visitor's point of view)

Awareness/Extension:

- awareness of existence and benefits of park or site

Pretrip:

- motivation for and information to plan trip

Enroute:

- orientation information

Reception:

- welcoming, orientation to site, information

Park Activities:

1. - heritage presentation
 - recreational/educational opportunities
2. - access/transportation
 - accommodation/sustenance
 - sanitation
 - administration/management
 - resource protection/public safety
3. - reinforcement

Departure:

- departure information
- evaluation

Trends:

- Concerns:**
- from a user/activity perspective
 - from a management perspective

Management Action to Date:

Source: Tayler 1990

Figure 1.7 The Visitor Activity Group Profile

team at Gros Morne NPR identified several VAGs including one, labelled 'adventurers,' which comprised all park visitors who registered for an overnight stay in the backcountry. Backcountry areas are defined as those "...for which access is by hiking trail, canoe route or other non-motorized means." (pers.

comm. Doug Kolmer). It is this group of backcountry visitors that is of primary concern in this research.

The diversity of settings available in the area defined as backcountry in Gros Morne NPR provides a variety of recreation opportunities. The VAG ‘adventurers,’ referred to in this study as backcountry visitors, may not be a homogenous group. This thesis will examine different ways to classify visitors. In addition this study will contribute socio-economic information which will aid in identifying VAG profiles and will provide information on the types of services different groups desire as well as the environmental and management settings they prefer. The next section discusses one way to segment Gros Morne NPR visitors into meaningful groups.

1.5 Recreation Specialization

One major use of national parks, usually compatible with park objectives, is outdoor recreation. Park managers are challenged to provide recreation opportunities for a variety of visitors which not only supply satisfying experiences but also are appropriate within the park’s setting and consistent with the protection of park resources.

Outdoor recreationists are not all seeking the same recreation experiences, even if they are participating in the same activity (Hendee 1974). A recreation manager, in catering to the ‘average visitor,’ ignores the needs of important sub-

groups of recreationists (Jacob and Schreyer 1980) which are sometimes not easily identified.

Bryan (1979) proposed the concept of 'recreation specialization' as a way to divide outdoor recreationists into sub-groups based on their special interest in an activity. He defines recreational specialization as

...a continuum of behavior from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences. (Bryan 1979:29).

Specialization indices which place recreationists along recreation specialization continua have been used with some success in examining outdoor recreationists in protected areas within the United States (e.g., Kauffman and Graefe 1984; Graefe *et al.* 1985) and Canada (Grimm 1987). This concept of recreational specialization appears to offer promise for managers of national parks. Several studies have adopted recreation specialization as a meaningful way to group recreationists (Roggenbuck *et al.* 1980; Graefe 1980; Wellman *et al.* 1982; Kauffman and Graefe 1984; Williams and Huffman 1985; Graefe *et al.* 1985; Donnelly *et al.* 1986; Graefe and Kauffman 1987; Grimm 1987; Virden and Schreyer 1988). Most of these studies investigate the relationship of specialization to management concerns (e.g., depreciative behavior, perceived crowding) while some test the internal consistency of specialization by examining the relationships between different components of specialization (e.g., Kauffman and Graefe 1984; Virden and Schreyer 1988).

1.5.1 Applications: The Specialization Index

Bryan's (1977) original work employed participant observation and informal interviews as the means of obtaining data on trout fishermen in order to arrange them along a continuum of experience and commitment to the sport. This method, based on years of participant observation and personal experience with trout fishing, yielded a logical framework but was not an efficient means of applying the concept because of the time and person-hours involved. In response, Wellman *et al.* (1982) introduced the idea of a specialization index as a cost-effective tool for measuring levels of specialization among recreationists. This specialization index was created by examining recreationists' responses to questionnaire items aimed at determining their levels of experience, investment and involvement in canoeing. Specialization scores were determined by summing standardized scores across variables thought to represent these 'dimensions' of specialization.

Following Wellman *et al.* (1982) other researchers produced specialization indices based on similar dimensions using indicators modified to suit the particular recreation activity under study. For example, Donnelly *et al.* (1986) used number of days boating as one indicator of specialization in boating-related activities and Virden and Schreyer (1988) used number of hiking trips taken over the past year in their study of hiking specialization.

Previous studies in which specialization indices were calculated, share a number of common features (Table 1.1). They all examined similar 'dimensions' of activity specialization such as were described by Bryan (1979), namely, some measure of experience or participation; some measure of financial investment or economic commitment; and some measure of personal involvement. These dimensions comprised selected indicators, specific to the activity being investigated, in the form of questionnaire items. Responses to individual items are assigned values so that they can be summed to form the final measure of specialization.

The main differences among previous studies on recreational specialization were the specific activities being investigated and the details of the method for calculating final specialization scores. The distinguishing features of these methods include: 1) the method of selecting and retaining variables to form the index; 2) the method of standardizing or assigning value to each variable which makes up the index; and 3) how specialization scores, once calculated, are grouped for purposes of analysis, and whether any scores are excluded (see Table 1.1).

Table 1.1 Summary of Previous Specialization Research

Authors	Activity (Area)	Dimensions	Variable selection process	No. of variables selected	Variable valuing method	Grouping method	% high % med. % low
Virden and Schreyer (1988)	Hiking (U.S.)	- General experience - Recent experience - Equip. & econ. comm. - Centrality to lifestyle	Reliability Analysis	11 from 13	Convert to Z-score	N/A	N/A
Grimm (1987)	River-rafting (Canada)	- Experience - Involvement - Investment	Pearson's Corr.	9 from 20	Divide by max. score	Quartiles (highest & lowest)	24.6% 0% (excluded) 24.8%
Williams and Huffman (1985)	Back-packing (U.S.)	- Backpacking experience - Climbing experience - Involvement	Factor Analysis	10 from 13	Divide by Stand. Dev.	N/A	N/A
Donnelly <i>et al.</i> (1986)	Boating (Sail & Motor) (U.S.)	- Participation - Skill - Equipment - Boating related interests	N/A	8 from 8	Assign High & Low Value & Crosstab		21% 43% 36%
Kauffman & Graefe (1984)	Canoeing (U.S.)	- Participation - Skill - Equipment - Centrality of lifestyles	N/A	8 from 8	Assign to two categories & Crosstab		33.2% 32.6% 34.2%
Wellman, <i>et al.</i> (1982)	Canoeing (U.S.)	- Canoeing investment - Past experience - Centrality	Pearson's Corr.	10 from 20	Divide by maximum value	Quartiles (highest & lowest)	n=101 n=100
Graefe, <i>et al.</i> (1985)	Hiking (U.S.)	- Perceived hiking skill - Years of prior hiking experience - Number of hiking trips per year	N/A	3 from 3	Assign to three categories based on intuitive break-points		23% 59% 18%
Graefe & Kauffman (1987) (abstract)	Canoeing & climbing (U.S.)	- Participation - Skill - Centrality to lifestyle (two surveys used)	N/A	N/A	N/A	N/A	N/A

1.5.2 Problems Encountered

Two major problems have been identified in creating specialization indices:

- i) the selection of appropriate indicators (e.g., Donnelly *et al.* 1986); and
- ii) a lack of comprehensiveness (e.g., Williams and Huffman 1985).

In the first case, because a number of different criteria influence an individual's level of specialization, it is difficult to select the indicators which are most important in defining specialization along a continuum and across different activities (Donnelly *et al.* 1986). As they are currently measured, the indicators of specialization are assumed to be the same for an activity group, such as river rafters (e.g., Grimm 1987), which may not be the case when examining a broadly defined activity group such as backcountry users (Williams and Huffman 1985). Backcountry users may include hikers, campers, birdwatchers, cross-country skiers, skidooers, canoers and rock climbers. Certain indicators may be more important than others for differentiating people along a specialization continuum and across different activities (Donnelly *et al.* 1986).

For example, if one compares specialization levels between activities it can be seen that some activities are more equipment dependent than others. Wellman *et al.* (1982:329) found that

...simply knowing what equipment the canoeist owned would have provided nearly as much information as contained in the ten variables [they] indexed.

However, equipment ownership may be less appropriate as an indicator for visitor activity groups such as 'adventurers.'

To date, the development of specialization indices has followed a format which divides recreation into 'dimensions' of specialization which comprise a number of indicators. These indicators are generally questionnaire items specific to a predefined, and usually narrowly based activity, such as river-rafting (e.g., what types of craft do you own?). If one set of indicators (e.g., canoe ownership) is required to measure one activity group and another set of indicators (e.g., number of hiking trips taken) is required to measure another activity group this leads to two difficulties: 1) producing and distributing multiple survey instruments (e.g., Graefe and Kauffman 1987), and 2) comparing specialization scores between activities or sub-activities. Though similar methods of measurement have been used in past studies, there is no standard measure of specialization, and although some form of 'specialization index' appears to be the most common means of obtaining a measure of specialization, a generally accepted method for measuring specialization or for developing specialization indices has not yet been devised (Grimm 1987, Schreyer and Beaulieu 1986). There is a need for indicators which can address

common dimensions across and between activities and for a standard method which permits better comparison between studies.

The second major problem encountered with specialization indices is lack of comprehensiveness. A limitation of the index approach is that the degree of recreation specialization is defined relative to one particular activity rather than to outdoor recreation generally (Williams and Huffman 1985). Past research using the index approach has tended to address only the activity component of specialization. The dimensions commonly used in producing specialization indices include experience with the activity, equipment and economic commitment to the activity, and importance of the activity to the respondent's lifestyle (Virden and Schreyer 1988). According to Williams (1985), recreation is not a behavior, but an end state; the recreation experience is shaped by the basic elements of activities, settings, and companions.

Wellman *et al.* (1982) suggested that one reason for the lack of conclusive results in their study of canoeing specialization was that they neglected a 'resource-specificity' component. Their research concentrated on involvement in canoeing but neglected to incorporate a measure of the type of resource and social settings sought by recreationists. Williams (1989), as cited in Schreyer (1990:98),

...suggests that people tend to specialize on various elements of the environment depending on their desired experience. This may represent a focus on the setting

itself, on the setting as a place to carry out a desired activity, or a place to share a social experience with others.

In a prior article, Williams (1985:33) had suggested that an alternative approach to Bryan's concept,

...which may apply across activity types, is to expand the notion of activity specialization to include all of the recreation choice elements.

Viriden and Schreyer (1988) attempted to include these elements in their investigation of the relationship of the degree of hiking specialization to types of preferences recreationists hold for different setting attributes. They found a relationship between the degree of hiking specialization and preferences for selected physical (e.g., rugged terrain), social (e.g., small parties) and managerial (e.g., required permits) site attributes. Generally, however, setting has not been incorporated in measures of specialization.

In summary, the strengths of the specialization index approach to segmenting national park visitor groups are its intuitive appeal as a way of classing visitors, since it is easily understood and uses observable criteria; and its demonstrated success in dividing visitors into meaningful groups, which lends itself to management applications, such as zoning for specific visitor group desires. The weaknesses to this approach are its current lack of a standard methodology, which limits the comparability of results from different studies; its need for more generic indicators, which can be used to assess and compare

different activities or sub-activities; and its questionable ability to meaningfully segment recreationists if it addresses only the activity component of recreation while neglecting setting and companions as equally important components of recreation.

1.6 Statement of Problem and Research Objectives

This thesis describes the use of a specialization index to provide park management with information about one group of visitors defined by their use of the backcountry. The assumption that all backcountry users (or adventurers) are seeking a similar recreational experience, or are even participating in the same activity, may be erroneous and further differentiation may be useful. The data gathered from this study provide a basis for confirming or correcting assumptions about a park visitor group which is assumed to be homogenous.

The objectives of this research are:

- 1) to construct a specialization index using generic indicators and assess the relative degree of specialization of different visitor groups
- 2) to test the relationship between specialization and environmental attributes
- 3) to test the relationship between specialization and support for management strategies
- 4) to provide a description of frontcountry and backcountry users for use in the implementation of the Visitor Activity Management Process in Gros Morne National Park Reserve.

Several hypotheses were constructed relevant to these objectives. These will be discussed in more detail in Chapter 3.

1.7 Significance of Current Study

There is little information available regarding the interests and activities of visitors to the backcountry of Gros Morne National Park Reserve. Lack of knowledge regarding visitor expectations and their desires for recreation opportunities reduces the likelihood that they will be met effectively and that multiple, and possibly conflicting, requirements will be recognized and acted upon. A measure of levels of specialization among park user groups will enable park managers to identify homogenous user groups. They can then use this data to

...match levels of service with target markets and downscale, retrofit or develop the appropriate levels of information and services to match [these] user groups...(Graham *et al.* 1987:160).

To date, most research has taken place in the United States. This study will add to the research base on recreational specialization in Canada. Grimm's (1987) study, undertaken in the northern Canadian setting of Nahanni National Park Reserve, examined river-rafting, a specific water-based activity. This thesis will instead focus on backcountry use, a more regionally defined and less focused activity which takes place on land, in the more southern Gros Morne

National Park. This research will investigate the applicability of using generic indicators to create a specialization index which can measure specialization across the quite different sub-activities within the activity labelled backcountry use. It will examine relationships between visitor groups and their preferences for environmental attributes and support for management strategies. Further, it will provide a broad activity profile of the backcountry visitor for use in VAMP.

2.0 RESEARCH DESIGN

The problem addressed by this research is to find a way to meaningfully classify visitors to Gros Morne NPR into relatively homogenous groups for the purpose of visitor management. One way of dividing visitors is by assigning them a recreational specialization score which is derived from responses to selected questionnaire items. Other ways to divide visitors is by their choice of recreation setting or by their choice of activity within the setting.

This research is an observational study with no experimental manipulations. It generally follows methods used in prior studies looking at recreational specialization (e.g., Virden and Schreyer 1988, Grimm 1987, Wellman *et al.* 1982). Following Virden and Schreyer (1988), comparisons between visitor groups and their preferences for environmental attributes and support for management strategies were made.

The population of interest, backcountry visitors, was surveyed using a mailed questionnaire. Frontcountry visitors, represented by a sample of Green Point visitors, act as a contrast group for the data analysis and were surveyed with a hand delivered questionnaire.

2.1 Study Area: Gros Morne National Park Reserve

Gros Morne NPR presented an excellent opportunity to study recreational specialization as one means of visitor segmentation within the context of a national park. It is an excellent research site for the following reasons: 1) it has

about visitor characteristics and current activity patterns as well as some idea about their expectations and requirements for a satisfactory experience.

Recent surveys of Gros Morne's campground visitors have provided information about visitors to frontcountry areas and their satisfaction with park facilities (Environment Canada 1989a, 1989b, 1987, 1986). This group makes up the majority of visitors to Gros Morne: the ratio of frontcountry to backcountry visitor is approximately 8:1 (pers. comm. Doug Kolmer). However data about Gros Morne's backcountry visitors, a smaller but important group, has been limited to what can be gleaned from their registration permits (see section 2.3.1).

For the purposes of this study, Gros Morne NPR was divided into two major study areas, the backcountry and the frontcountry. The primary area of interest was the backcountry; however, a sample of frontcountry visitors with whom comparisons to backcountry visitors could be made was represented by visitors to Green Point campground. More detailed descriptions of these study sites follow.

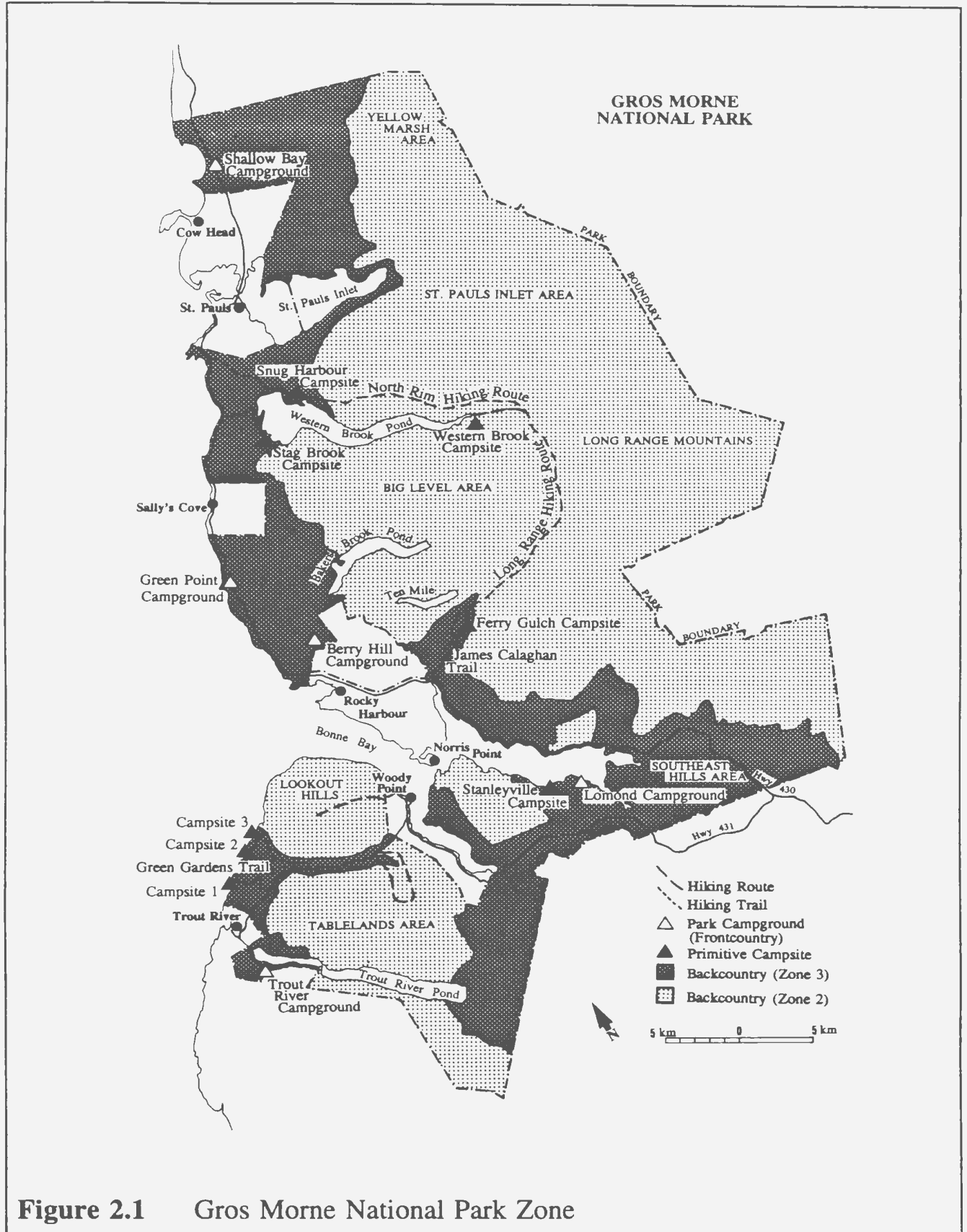
2.1.1 The 'Backcountry' Study Site

The backcountry differs from the rest of the park both in its physical attributes and management regimes. Gros Morne has been divided into four park management zones. For the purpose of this study, backcountry areas were

defined to include all the areas in Zone 2 (Wilderness Zone) as well as all primitive campsites located in Zone 3 (Recreational Zone) (Figure 2.1). This definition conforms to the concept of backcountry being rugged, undeveloped, and not road accessible (Hendee, Stankey and Lucas 1990), but allows a distinction to be made between two slightly different park management strategies.

Zone 2 backcountry is managed as a 'wilderness' environment which means limited, if any, development of facilities and no marked trails. Map and compass skills are required to traverse any of the suggested routes. These routes, the North Rim, Long Range, Lookout Hills and Tablelands hiking routes, go through arctic-alpine tundra, tuckamore, loose peridotite boulders, and boggy heaths and provide some of the landscape viewpoints which have made Gros Morne world famous.

Zone 3 backcountry contains seven primitive campsites which provide limited facilities (pit privies, and picnic tables) located along easily identifiable and maintained trails. These trails, Green Gardens, Stanleyville, James Calaghan, Stag Brook and Snug Harbour, travel through various terrains, including coastal meadows, scree slopes, and boglands.



2.1.2 The 'Frontcountry' Study Site

The remaining park area, designated frontcountry, includes all the park areas which have been developed for use by visitors. Most of this area, within the physiographic regions of the Coastal Plain and Piedmont Moraines, is relatively flat and is accessed by highways 430 and 431 (Figure 2.1). Gros Morne's present development of frontcountry facilities include:

- 1) five vehicle-accessible and fully or semi-serviced campgrounds comprising 287 sites;
- 2) sixteen developed hiking trails ranging in difficulty from easy to strenuous and in distance travelled from 1 to 16 kilometres return;
- 3) six roadside interpretive exhibits;
- 4) ten scenic lookouts and several day use areas;
- 5) a Visitor Reception Center;
- 6) an indoor swimming pool;
- 7) three warden stations; and
- 8) an administrative building (Environment Canada 1990; Environment Canada 1991b).

The park is also serviced by several enclave communities where bed and breakfast accommodations, hotels, restaurants and shops are available to park visitors. Private enterprises such as the Western Brook Pond Boat Tour and Trout River Pond Boat Tour also provide services within the park.

There were several possible choices for frontcountry study sites including: Shallow Bay, Berry Hill, Lomond, Trout River and Green Point (see Figure 2.1). Differences between these frontcountry sites include number of sites and types of facilities provided (see Table 2.1).

Table 2.1 Number of Sites and Facilities Provided

Facilities	Berry Hill	Shallow Bay	Lomond	Trout River	Green Point
Camp Sites	156	50	25	33	18
Foot Access	6	3	4		
Hot Water	*	*	*		
Showers	*	*	*		
Flush Toilets	*	*	*		
Dumping Station	*	*			
Playground	*	*	*	*	
Fireplaces	*	*	*	*	*
Kitchen Shelter	*	*	*	*	*
Fee/night	\$11.25	\$8.75	\$8.25	\$7.25	\$7.25

Source: pers. comm. Doug Kolmer

Green Point campground was selected as an appropriate study site for four reasons: 1) it was considered to serve visitors 'typical' of the park's largest campground (it provides the overflow for Berry Hill) and could thus provide a reasonably representative sample of the majority of Gros Morne's campground users (pers. comm. Lorne Logan); 2) its relatively small size enabled one person

to survey visitors over the entire site; 3) it had not previously been surveyed, thus response burden to repeat park visitors was limited; and 4) information collected would be new and valuable to the Park Service.

Green Point's similarities to other sites include: its road accessibility (all sites); its nearness to the ocean (Shallow Bay, Lomond); its limited facilities (Lomond walk-in and Trout River); and its centrality (Berry Hill). However, there is no data to support the idea that Green Point visitors are the same as visitors to the other frontcountry sites. Therefore, results obtained from the sample at Green Point cannot be generalized to all frontcountry visitors within Gros Morne or to frontcountry visitors at other national parks.

2.2 Study Population

Two different approaches to sampling were used in this study. The estimated backcountry population for 1990 was relatively small, about 700, hence an attempt was made to survey the entire backcountry population. Unlike many non-park settings, Gros Morne NPR's park permit requirement funnels the entire backcountry population through a registration process. Thus it was possible to contact each individual going into the backcountry and ask them to participate in the study.

As a comparative group, a sample of frontcountry users was selected and Green Point campground was chosen as the sample site. An attempt was made to survey all campers during a specified time frame within the peak season.

2.2.1 Backcountry Sample

The target population for this study consisted of all individuals, aged sixteen and over, who registered for permits to travel overnight in the backcountry of Gros Morne National Park during the 1990 season. Park personnel were asked to collect names and addresses for each individual registered into the backcountry. The effort to contact every individual registered was made in order to eliminate the bias which has been suspected in previous surveys of this nature when only group leaders were contacted (Manning 1986).

Of the 650 persons who registered for overnight stays in the backcountry, addresses for 507 individuals (78%) were obtained. The discrepancy between these numbers may be accounted for in several ways. Park attendants were not equally consistent in requesting the completion of consent forms, particularly when visitors registered at stations other than the main Visitor Reception Center. Some registered individuals were younger than the defined population age of sixteen years, and some names and addresses on completed consent forms were illegible.

2.2.2 Green Point Sample

The target population for this study consisted of all individuals, aged sixteen or over, who camped overnight at Green Point campground during the periods July 24th to 30th and August 4th to 8th.¹ These dates represent the peak periods for campground occupation and provided the best opportunity to obtain a good sample size.

2.3 Data Collection

Approval for this research project was required at the federal, regional and local park levels before data collection could proceed. A Planning Report outlining the objectives and proposed methods of the study, presented to Environment Canada and the Canadian Parks Service was approved in the spring of 1990.

To work within the jurisdiction of a federal park both facilitates and limits research efforts. Facilities, information, personnel and funding are often available to assist the research project. However, federal departments and agencies are subject to governmental bureaucracy, such as requiring translations of all research associated documents into both official languages; and specific legislations, such as the Access to Information and Privacy Acts (1983), which

¹ During the sample period only 17 of the 18 sites were available since Site #16 was the research camp.

impose limitations on research projects. For example, in order to uphold the Privacy Act, address lists of past registrants were not to be made available for use as a survey mailing list. In addition, rather than presenting backcountry visitors a survey form as they registered, the researcher had to obtain permission through a visitor-completed consent form prior to contacting backcountry registrants. This type of procedure, though required by federal law, limits the number of people who are contacted and slows down the process of data gathering. It is also possible that this process affects the response rate (see section 2.3.2.2).

2.3.1 Past Park Permit Data

As a safety precaution, persons wishing to stay overnight in the backcountry are required to register with park personnel, at no charge, for a permit. The information provided by these permits includes:

- 1) date and time of trip
- 2) date and time of return
- 3) name of party leader
- 4) car license number
- 5) number in party
- 6) home address and phone number
- 7) local address and phone number
- 8) intended route and destinations.

Statistical records of permit data for the years 1987, 1988, 1989 (prior to this study) and 1990 (during this study) were provided by the Atlantic Regional Socio-economic Office and included frequency tables for the following:

- 1) number of parties per month
- 2) length of stays in nights (by party)
- 3) number in party
- 4) origin of party leader
- 5) destination site chosen.

Information from 1987-1989 was used to predict the backcountry population for the 1990 study period. The 1990 records were used to check for the possibility of systematic differences between respondents and non-respondents. For example, if the proportions of respondents from the U.S. closely matches the proportion of permit holders from the U.S. it may be assumed that visitors from the U.S. were not biased against responding and that American opinions were not under represented.

2.3.2 The Survey Instrument

Several methods of surveying park and backcountry users were considered including:

1. on-site personal interviews (Bryan 1979, Graefe *et al.* 1985);
2. hand-out/hand-back questionnaire (McIntyre and Pigram 1992);
3. hand-out/mail-back questionnaire (Williams and Huffman 1985);
4. mail-out/mail-back questionnaire (Wellman *et al.* 1982, Kauffman and Graefe 1984, Virden and Schreyer 1988);
5. participant observation (Bryan 1979).

The questionnaire format (options 2,3 and 4) was chosen over the interview and participant observation as the most time- and cost-effective means of acquiring information about Gros Morne visitors without unduly interrupting their recreational experience. The specific methods used were the mail-out/mail-back questionnaire (option 4) for the larger backcountry population and the hand-out/hand-back (option 2) questionnaire for the smaller Green Point survey group.

2.3.2.1 Questionnaire Design

Two versions of the questionnaire were generated and were available in both of Canada's official languages; English and French (Appendix A). The wording of many of the items was based on items from other recreation studies (Grimm 1987, Virden and Schreyer 1988) and on questionnaires used by Environment Canada Parks. Draft versions of the questionnaire were presented to Environment Canada Parks (Socio-economic Branch, Atlantic Region) and to Statistics Canada. Among the items of most concern to Statistics Canada were those questions addressing personal information such as income. After some minor revisions, the questionnaire was approved by both government agencies.

The primary questionnaire was designed specifically to address the 'Backcountry Visitor.' The questionnaire version presented to the Green Point campers was essentially the same but the wording in the cover letter and

introductory paragraphs was modified to address the more general 'Gros Morne Visitor.'

The questionnaire is divided into four sections (see Appendix A). The first section is designed to classify respondents based on activity specialization index items and to elicit recreation setting attribute preferences which may be used as an environmental dimension to the specialization index. Responses to setting attribute items are based on a 5-point, Likert type scale ranging from 1) not at all important to 5) extremely important. The second section lists several common management strategies for protected areas and asks respondents to identify their level of support or opposition for each strategy. Section three is designed to obtain information about the respondents' experience specific to their most recent Gros Morne trip and the final section contains socio-demographic items. The questionnaire concludes with an open question designed to elicit comments about visitors' experiences in Gros Morne National Park.

2.3.2.2 Backcountry Questionnaire Distribution and Response Rate

Although a hand-out/mail-back questionnaire might have provided a higher response rate (c.f., Williams and Huffman 1985) at a lower cost, this approach was not approved by Environment Canada Parks because of certain legal requirements (see Section 2.3) and difficulties involved with staff handling

surveys in addition to their regular duties. Environment Canada Parks instead helped to fund the more costly mail-out/mail-back questionnaire.

The park staff collected completed consent forms (Appendix B) which also indicated the language preference of the respondent. These consent forms were compiled into a mailing list for 507 individuals, 22 (4%) of whom requested questionnaires in the French language. A questionnaire package in the preferred language was sent to the homes of the backcountry users for participants to complete upon returning from their Gros Morne trip. This package included the questionnaire with a cover letter explaining the project and the importance of each visitor's response (Appendix A), and a postage-paid return envelope (Dillman 1978). A follow-up postcard (Appendix C) was sent approximately three weeks after the initial mailing in an attempt to maximize the response rate (Dillman 1978). The postcard thanked those who had already responded and a tear-away return postcard provided the opportunity to request additional or replacement questionnaires.

Of the 507 questionnaires mailed out, four were returned as undeliverable. Two-hundred and seventy-two questionnaires were eventually returned but six were returned after the cut-off date for a total of 266 usable questionnaires (a response rate of 53%). This represents forty-one percent of actual visitors. This is a rather low response rate compared to other studies of similar groups of visitors. Traditionally, outdoor recreation studies have obtained very high

response rates from participants in wilderness-related activities (Lucas and Oltman 1971). For example, response rates of 73% (Wellman *et al.* 1982) and 69% to 78% (Kauffman and Graefe 1984, Grimm 1987) have been obtained in studies of river users. Rates of 68% (Virden and Schreyer 1988) and 82% to 91% (Lucas 1985) have been obtained in surveys of wilderness hikers. Surveys of winter campers have yielded rates of 75% (Hammitt *et al.* 1985).

2.3.2.3 Green Point Questionnaire Distribution and Response Rate

A hand-out/hand-back questionnaire was used to survey Green Point campers. This approach reduced the costs associated with a mailed questionnaire, and it was anticipated that personally requesting the respondent's participation would produce a higher response rate.

Arrangements were made with the Park Service for the researcher to camp at Green Point campground during the peak visitor months of July and August in order to obtain on-site information and acquire a sense of the Gros Morne experience. The main purpose for staying at Green Point was to hand deliver questionnaires to Green Point campers. Camping at Green Point also provided the opportunity to interact with a wide variety of park visitors both in the campground and along numerous trails in the northern section of the park, accessed by high-way 430 (see Figure 2.1). The southern section of the park,

accessed by highway 431, was not visited as travelling time from Green Point was too great.

Of the 110 parties who camped at Green Point during the study period, 12 parties could not be contacted. Nine parties indicated that they were proceeding to the backcountry and were asked to complete the backcountry survey instead.

A total of 206 individuals were contacted of whom only nine refused to participate. Of the 197 who agreed to participate in the study, 15 did not return their questionnaires and 13 returned unusable questionnaires. A total of 173 usable surveys were returned and analyzed. This gave a response rate of 87%. This is quite a good response rate though higher rates using a hand-out/hand-back survey have been reported (McIntyre and Pigram 1992).

2.4 Data Analysis

Demographic information, including 1) place of residence, 2) age, 3) gender, 4) education level, 5) family income level, and 6) occupation, was collected in order to provide a user profile of backcountry visitors and to make comparisons between sub-groups.

Respondents were divided into sub-groups based on their choice of setting and their primary activity within that setting. The variables used to group respondents were: 1) the one activity which they considered to be their primary

form of outdoor recreation; and 2) the area of the park in which they indicated at least one overnight stay.

The next important step was to develop an index of specialization using generic wording for the indicators. Four dimensions of specialization common to previous studies were identified: participation, expenditure, skill and involvement. Rather than word the indicators specific to one activity, such as river rafting, the indicators were worded so that they could apply to any primary activity that the respondents identified as their activity. For example, the participation dimension included the following variables: 1) number of years participated in primary activity and 2) number of times participated in primary activity in the past year. The expenditure dimension examined 1) the value of equipment owned and 2) the amount of expenses related to the primary activity other than equipment. The skill dimension was measured by 1) respondents' classification of their skill level and 2) respondents' assessment of their comfort in the outdoors. The last dimension, involvement, was made up of 1) memberships in clubs related to primary activity; 2) subscriptions to magazines or newsletters related to primary activity and 3) attendances at training courses or workshops related to primary activity (Table 2.2).

Following Virden and Schreyer (1988), variables were standardized by calculating Z-scores for each ($M = 0$, $S.D. = 1$). Scores above the mean received positive scores while those below the mean received negative scores.

Table 2.2 Summary of Variables in Specialization Index

DIMENSION	QUESTIONNAIRE ITEM ¹	VARIABLE NAME
Participation	4. How many years participated in PRIMARY activity?	YRSPART
	5. How many times participated in PRIMARY activity over past year?	TMSPART
Expenditure	9. What is value of equipment and clothing related to PRIMARY activity? ²	EQUIPVAL
	10. How much spent on other expenditures related to PRIMARY activity? ²	EXPEND
Skill	6. Rate your skill level for your PRIMARY activity. ³	SKILL
	7. Rate yourself as an outdoorsperson. ⁴	OUTDOOR
Involvement	11. List any clubs related to PRIMARY activity to which you belong. ⁵	NUMCLUB
	12. List any magazines related to PRIMARY activity to which you subscribe. ⁵	NUMMAGS
	13. List any formal training in PRIMARY activity in last two years. ⁵	NUMTRAIN

- Notes:
- 1 See Appendix A for actual wording
 - 2 Measured on 8 category scale from \$0 to \$80,000 +
 - 3 Ratings: Novice, Beginner, Intermediate, Advanced, Expert
 - 4 Rated on a 6 category scale
 - 5 Recorded as number listed

A specialization score was determined for each respondent by summing these standard scores. The specialization levels of sub-groups defined by setting choice and primary activity were analyzed using difference of means tests.

Environmental preferences of different visitor groups were assessed by examining importance ratings given to seventeen selected attributes (Section 3.6). Visitor group opinions of various management strategies were

analyzed by difference of means tests for each of 23 selected options (Section 3.7).

3.0 RESULTS

3.1 Demographic Description of Visitors to Gros Morne NPR

The following sections describe people who responded to either the questionnaire version mailed out to visitors registered into the backcountry or the questionnaire version handed out to visitors to Green Point campground. Comparisons are made between visitors to Gros Morne NPR and visitors to Nahanni NPR who participated in river running (Grimm 1987).

3.1.1 Visitor Place of Residence

Backcountry visitor residences differ from Green Point visitor residences (Table 3.1). A much larger proportion of backcountry visitors lived outside of Newfoundland. In contrast the largest proportion of visitors to Green Point are from within the province (Figure 3.1).

Backcountry respondents originated from six countries. The majority of visitors were from Canada (60.2%, n = 159) followed by the United States (34.8%, n = 92), and the European countries of Germany, Denmark, France and the Netherlands (5.0%, n = 13).

The Canadian provinces most highly represented were Ontario (20.8%, n = 55), Nova Scotia (13.6%, n = 36) and Newfoundland (13.3%, n = 35). Visitors from the New England states (primarily New York and Massachusetts) constituted 20.4% (n = 51) of total visitors.

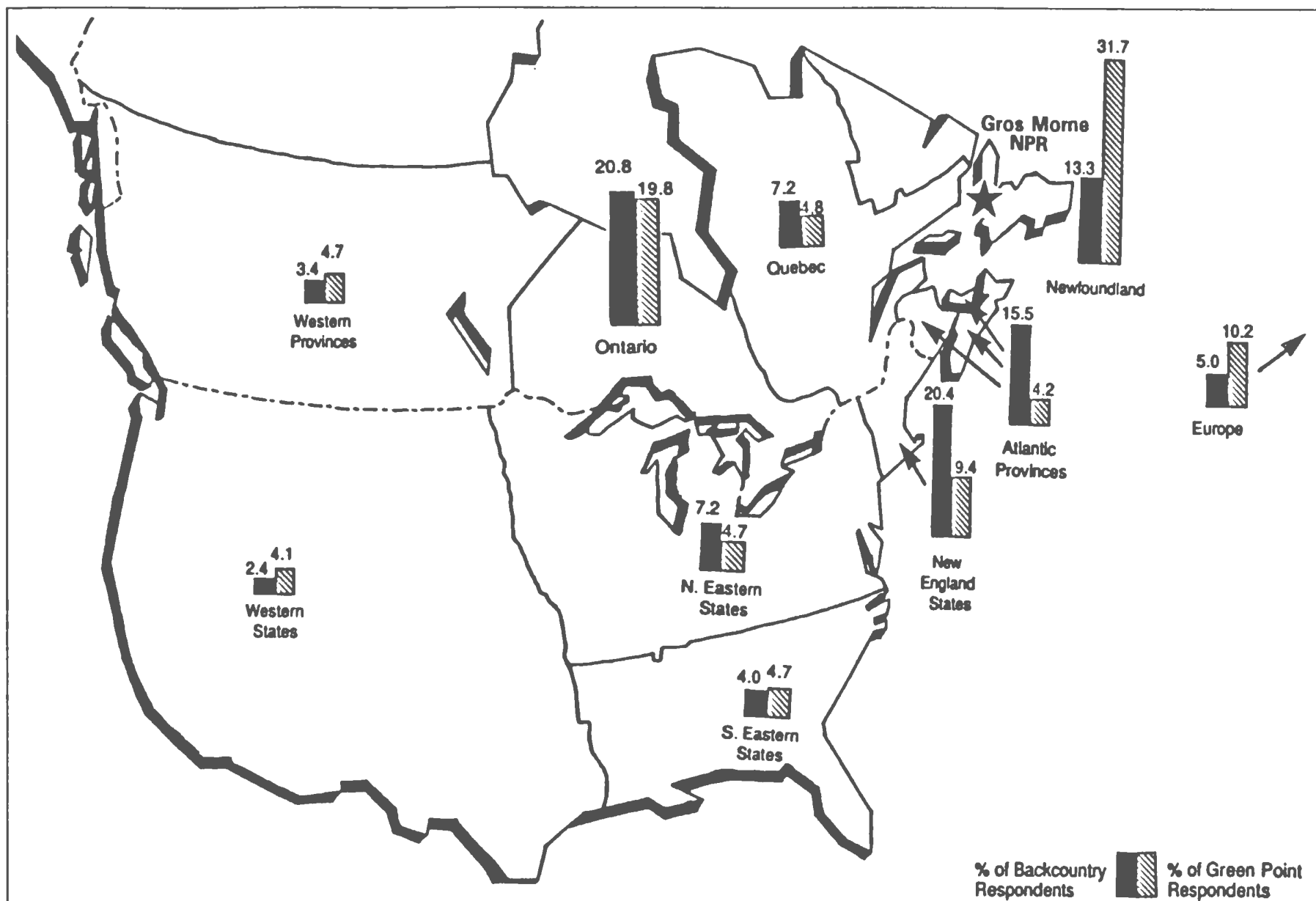


Figure 3.1 Origins of Visitors to Green Point and the Backcountry of Gros Morne NPR

Table 3.1 Residences of 1990 Visitors to Gros Morne NPR

Country, Province or State of Residence	Backcountry Respondents		Green Point Respondents	
	n	%	n	%
CANADA				
Newfoundland	35	13.3	53	31.7
Atlantic Provinces	41	15.5	7	4.2
Quebec	19	7.2	8	4.8
Ontario	55	20.8	33	19.8
Western Provinces	9	3.4	8	4.7
UNITED STATES OF AMERICA				
New England States	51	20.4	16	9.4
N. Eastern States	18	7.2	8	4.7
S. Eastern States	10	4.0	8	4.7
Western States	6	2.4	7	4.1
EUROPEAN COUNTRIES	13	5.0	17	10.2

Green Point visitors also originated primarily from Canada (67.1%, $n = 112$). The second largest group was from the U.S. (22.9%, $n = 39$) and the remaining 10.2% ($n = 17$) originated from Great Britain, Switzerland and Germany. Of the Canadians who visited Green Point, the majority were residents of Newfoundland (31.7%, ($n = 53$) and Ontario (19.8%, $n = 33$).

Grimm (1987) found that visitors to Nahanni NPR originated primarily from Canada (69.%), and the United States (21.2 %) with 9.4% of visitors visiting from overseas. These proportions are similar to those illustrated in Table 3.1 although the pattern of visitor home countries is more similar to the pattern for Green Point than for the backcountry. The larger proportion of

Americans visiting Gros Morne NPR backcountry, compared to Americans visiting Nahanni NPR is likely due to the nearness of Gros Morne to the U.S. Proximity is a factor in visitation as is illustrated in the patterns of provincial origins. Visitors to Nahanni have a larger representation from Western provinces (Ontario 25.7%, Alberta 19.5%, and B.C. 10.5%) (Grimm 1987) than visitors to Gros Morne NPR backcountry (Ontario 20.8%, Atlantic provinces 15.5% and Newfoundland 13.3%). The large proportion of visitors to both parks from Ontario is an interesting result though probably a product of the large population of that province.

3.1.2 Visitor Age

There is a significant difference between the ages of backcountry and Green Point visitors ($t_{(428)} = 7.97, p < .001$). Although the ranges of ages are similar, the mean age of backcountry visitors ($M = 33.23$ yrs.) is much lower than that of Green Point visitors ($M = 42.64$ yrs.).

The ages of Gros Morne backcountry visitors ranged from 16 (the youngest age invited to participate) to 73 years. Approximately one half of the visitors fell between the ages of 27 and 37 (51.9%, $n = 137$), with one half of this group (25.4%, $n = 67$) between the ages of 27 and 30.

For comparison with previous research, Gros Morne backcountry visitors were arranged into similar age classes (Table 3.2). The age class with the

Table 3.2 Age of 1990 Visitors to Gros Morne NPR

Age Groups	Backcountry Respondents		Green Point Respondents	
	n	%	n	%
under 20 years	9	3.5	9	5.4
20 to 29 years	101	38.2	31	18.6
30 to 39 years	96	36.2	31	18.6
40 to 49 years	43	16.2	42	25.2
50 to 59 years	9	3.5	24	14.4
60 to 69 years	4	1.5	25	15.0
70 years and over	2	.8	4	2.4
No Response	2	---	6	---
	n = 264	Median = 32	n = 166	Median = 42
	Mean = 33.3	Mode = 29	Mean = 42.6	Mode = 44
	S.D. = 9.6	Range = 57	S.D. = 14.8	Range = 60

largest representation was the 20 to 29 year age group (38.2%, n = 101)

followed closely by the 30 to 39 year age group (36.2%, n = 96).

Green Point respondents ranged in age from 16 to 76. The largest age class was the 40 to 49 year age group (25.2%, n = 42), followed by the 30 to 39 and 20 to 29 year age groups, each of which comprised 18.6% (n = 31) of respondents.

Visitors to Nahanni NPR ranged in ages from 11 to 75 years (Grimm 1987). The majority (38.1%) were in the 30 to 39 year age group followed by the 20 to 29 year age group (20.8%) and the 40 to 49 year age group (20.2%) (Grimm 1987). Visitors to Gros Morne NPR backcountry are younger and visitors to Green Point are older than visitors to Nahanni NPR. There is no

clear explanation for these differences. Perhaps river running in Nahanni NPR requires more skill and experience (acquired with age) than does hiking and camping in the backcountry of Gros Morne NPR. It may, however, require physical stamina that visitors to Green Point, as an older group, lack.

3.1.3 Visitor Gender

The patterns of gender representation in the backcountry and Green Point were different ($\chi^2_{(1)} = 7.22, p < .01$). Males made up 64.5% ($n = 171$) and females 35.5% ($n = 94$) of the backcountry respondents compared to 51.5% ($n = 86$) male and 47.1% ($n = 81$) female in the Green Point sample.

Grimm (1987) reported 76.7% of Nahanni NPR visitors were male and 23.3% were female. This may be evidence of gender preferences for certain types of outdoor activities but more comparisons need to be made before that conclusion is confirmed.

3.1.4 Visitor Education Level

The educational level of backcountry visitors was greater than that of Green Point visitors ($\chi^2_{(3)} = 35.12, p < .001$). Gros Morne NPR backcountry visitors are well educated. Approximately sixty-seven percent ($n = 178$) had at least one university degree with the majority of this group (63.5%, $n = 113$) having pursued post graduate study (Table 3.3). This is very

Table 3.3 Education Levels of Visitors to Gros Morne NPR

Education Level	Backcountry Respondents		Green Point Respondents	
	n	%	n	%
Some Elementary	0	0	2	1.3
Finished Elementary	0	0	1	.6
Some High School	6	2.3	15	9.4
Finished High School	16	6.1	21	13.2
Some Technical School	8	3.0	8	5.0
Finished Technical School	17	6.4	20	12.6
Some University	39	14.8	26	16.4
Finished University	65	24.6	33	20.8
Postgraduate Study	113	42.8	33	20.8
No Response	2	---	13	---

much higher than the education level of Canadians generally. The 1986 census shows that of Canadians aged 15 years and older only 3.2% had undertaken post-graduate studies and only 6.4% had completed a bachelor's degree. However, these results are consistent with other recreation studies that suggest participants in outdoor recreation are highly educated (Manning 1986).

Green Point visitors were also well educated when compared to the general Canadian population, though not to the same degree as backcountry visitors. Those having completed bachelor's degrees made up 20.8% (n = 33), and those going on to do a post-graduate education made up an additional 20.8%, of respondents. However, whereas none of the backcountry users listed

‘elementary’ or ‘some high school’ as their highest level of education, 11.3% (n = 18) of Green Point respondents listed themselves in the categories ‘some elementary school’ to ‘some high school’ education.

The results for Gros Morne NPR backcountry visitors are comparable with those of Grimm (1987) who reports that the majority of visitors to Nahanni NPR have completed university (64.3%).

3.1.5 Visitor Occupations

Visitors were asked to report their usual occupation (Q. #32, Appendix A). Following Grimm (1987), these responses were classified using Statistics Canada’s Standard Occupational Classification (1980). Backcountry respondents were categorized into eighteen major occupational groups with the additional groups of student, retired, and homemaker (Table 3.4). The occupational groups most highly represented among backcountry users included: natural sciences, engineering and mathematics (19.3%, n = 42); teaching and related occupations (17.4%, n = 38); and managerial, administrative and related occupations (12.4%, n = 27). Approximately 15.1% (n = 33) of the visitors listed themselves as students.

Green Point respondents were divided into seventeen major occupation groups plus the groups student, retired and homemaker (Table 3.4). The

Table 3.4 Occupations of 1990 Visitors to Gros Morne NPR

Occupation Title	Backcountry Respondents		Green Point Respondents	
	n	%	n	%
Student	33	15.1	13	8.4
Retired	2	0.9	27	17.5
Homemaker	4	1.8	12	7.8
Managerial, administrative and related occupations	27	12.4	14	9.1
Natural sciences, engineering and mathematics	42	19.3	11	7.1
Social sciences and related fields	13	6.0	7	4.5
Religion	1	0.5	0	0.0
Teaching and related occs.	38	17.4	20	13.0
Medicine and health	20	9.2	7	4.5
Artistic, literary, recreational and related occupations	11	5.0	3	1.9
Clerical and related occs.	3	1.4	6	3.9
Sales occupations	2	0.9	6	3.9
Service occupations	2	0.9	2	1.3
Farming, horticulture and animal husbandry	1	0.5	1	0.6
Forestry and logging occs.	0	0.0	2	1.3
Processing occupations	1	0.5	0	0.0
Machining and related occs.	0	0.0	4	2.6
Product fabricating, assembling and repairing occs.	4	1.8	2	1.3
Construction trades occs.	5	2.3	6	3.9
Transport equip. operating	4	1.8	8	5.2
Other crafts and equipment operating occupations	3	1.4	2	1.3
Other occupations	1	0.5	1	0.6
No response	48*	---	18	...

Note: *44 respondents received faulty questionnaires which did not ask occupation.

majority listed themselves as retired (17.5%, $n = 27$). The same major occupational groups listed for backcountry visitors were also most highly represented among Green Point users, but the highest was teaching and related occupations (13%, $n = 20$), followed by managerial, administrative and related occupations (9.1%, $n = 14$), and natural sciences, engineering and mathematics (7.1%, $n = 11$).

The representation of managers and administrators in both visitor groups is roughly equivalent to the proportion of Canadians listed in the census (10.3%). However, based on 1986 census data, only 4.2% of Canadians were teachers and only 3.4% were employed in natural sciences, engineering and mathematics. The proportion of teachers in the backcountry is approximately four times higher, and the proportion of teachers in Green Point is three times higher than the census figure. The proportion of natural scientists, engineers and mathematicians in the backcountry is roughly six times the census figure and the number for Green Point is twice the census figure. Clearly teachers and natural scientists, engineers and mathematicians are important visitor groups in both Gros Morne NPR areas.

The occupational groups most highly represented among visitors to Nahanni NPR (teaching and related occupations 14.9%, natural sciences, engineering and mathematics 14.4%, managerial, medicine and health 11.0%, and administrative and related occupations 10.8%) (Grimm 1987) are similar to those represented among Gros Morne NPR visitors, with the exception of the high representation of medicine and health-related occupations represented among Nahanni NPR visitors.

3.1.6 Visitor Family Income Levels

The family income levels reported by backcountry visitors was above that reported by Green Point visitors ($\chi^2_{(2)} = 6.35, p < .05$).

Although the income levels for backcountry visitors were fairly evenly distributed across the eight categories, the majority of family incomes were over \$70,000 (20.0%, $n = 52$) which was consistent with the high education levels and occupations given. The \$30,001 to \$40,000 category described the second largest group (17.3%, $n = 45$), followed by the \$10,001 to \$20,000 category (13.1%, $n = 34$), which may be partly accounted for by the number of students who would have high education but not yet have an income in line with their training. The \$20,001 to \$30,000 (12.3%, $n = 32$), \$40,001 to \$50,000 (11.9%, $n = 31$) and \$50,001 to \$60,000 (11.5%, $n = 30$) categories were all very similar in size (Table 3.5).

Of the 172 Green Point respondents, a substantial number ($n = 39$) did not provide valid responses when asked their family income. The majority of Green Point respondents (37.6%, $n = 50$) place themselves in the two categories between \$40,001 to \$60,000. The over \$70,000 category has the second highest representation (16.5%, $n = 22$) (Table 3.5).

The income levels reported by visitors to the backcountry of Gros Morne NPR are comparable to those reported by visitors to Nahanni NPR (\$30,001-\$40,000 23.4%, and over \$50,000 21.8%) (Grimm 1987). Visitors to Nahanni NPR and both sites in Gros Morne NPR distributed themselves fairly evenly across the income categories so no clear patterns of income were demonstrated.

Table 3.5 Family Incomes of 1990 Visitors to GMNP

Family Income	Backcountry		Green Point	
	n	%	n	%
Less than \$10,000	16	6.2	4	3.0
\$10,001 - \$20,000	34	13.1	9	6.8
\$20,001 - \$30,000	32	12.3	13	9.8
\$30,001 - \$40,000	45	17.3	19	14.3
\$40,001 - \$50,000	31	11.9	27	20.3
\$50,001 - \$60,000	30	11.5	23	17.3
\$60,001 - \$70,000	20	7.7	16	12.0
over \$70,000	52	20.0	22	16.5
No Response	6	---	39	---

3.2 Specialization Index Calculation

In order to measure the degree of activity specialization of Gros Morne National Park visitors, an index was developed following methods used in previous specialization research (see Table 1.1). Three of the nine variables originally chosen to measure the dimensions of specialization (number of training courses taken, number of magazines subscribed to, and number of clubs member of) were not used because large percentages of people (83.8%, 68.3%, and 62.1% respectively) gave no responses for these variables.

The variable for number of times participated was missing data for 44 respondents due to a printing error which resulted in some questionnaires being sent out with that question missing. There was no reason to believe that

those who received faulty questionnaires were different from those who received correct questionnaires. Therefore, the mean value of this variable was assigned to respondents of faulty questionnaires in order to include them in the analysis. The final six variables which made up the index are shown in Table 2.2.

Following Virden & Schreyer (1988) the scores for these six variables were standardized by transforming them into Z-scores which were then summed to produce an activity specialization score for each respondent. Specialization index scores (SI) across all respondents ranged from a lowest score of $SI = -11.80$ to the highest score of $SI = 11.10$. The overall median score was $SI = -0.09$ and the overall mean score was $SI = -0.03$. Internal consistency for this statistic was moderate (Cronbach's $\alpha = 0.55$) (Nunnally 1967).

3.3 Visitor Sub-groups

Visitors to Gros Morne NPR were grouped in three ways. They were initially divided into those visitors who were contacted in Green Point and those who were contacted from the backcountry registration list. The second grouping divided them by setting choice and primary activity. Thirdly they were divided based on lowest and highest specialization score.

3.3.1 Setting Type Groups

Williams & Huffman (1985) suggested that setting choice was an important component of specialization and Virden & Schreyer (1988) linked hiking specialization to preference for different environmental attributes. In order to examine the possible relationship between setting choice and specialization, respondents were asked to indicate the areas in which they stayed overnight.

The park was divided into three setting choices: Backcountry Zone 2, Backcountry Zone 3, and Frontcountry (Figure 2.1). Backcountry respondents were grouped based on their responses to questionnaire item #24 (Appendix A) which asked them to indicate where they stayed overnight. One-hundred and eleven respondents who indicated at least one overnight in Zone 2 were grouped as Backcountry Zone 2 users (BC2). One-hundred and thirteen respondents indicated at least one overnight in Zone 3 were classed as Backcountry Zone 3 users (BC3). Twenty-five backcountry questionnaire respondents who indicated no overnight stays in either Zone 2 or Zone 3 were excluded from analysis, as were 17 cases with no response at all. Green Point respondents were assumed to be Frontcountry users (FC) however examination of responses to item #24 (Appendix A) indicated that 11 Green Point respondents had overnighted in backcountry areas and 5 had no response for this item. These cases were also excluded from the analysis leaving 156 FC users (Table 3.6).

Table 3.6 Frequency Rank Order and Mean Specialization Scores of Primary Activities By Setting Type

Backcountry Zone 2 (SI* M=0.56)(n=111)			Backcountry Zone 3 (SI M=0.56)(n=113)			Frontcountry (SI M=0.15)(n=156)		
Primary Activity	SI (M)	n	Primary Activity	SI (M)	n	Primary Activity	SI (M)	n
Hiking	0.17	79	Hiking	-1.25	60	Camping	0.50	53
Camping	-0.46	11	Camping	-0.21	25	Hiking	-1.34	22
Canoeing	0.68	7	Canoeing	-0.31	6	Fishing	3.49	10
Nature Study	4.27	5	X-C Skiing	0.05	6	X-C Skiing	-1.36	8
Photography	4.05	2	Other	1.99	5	Other	0.52	7
Winter Camping	5.26	1	Rock Climbing	4.79	2	Photography	0.75	4
Fishing	5.04	1	Wildlife Viewing	1.99	2	Wildlife Viewing	-6.18	4
X-C Skiing	1.04	1	Photography	-0.00	2	Rock Climbing	-1.26	2
Other	0.33	1	Winter Camping	-1.76	1	Snowshoeing	-3.98	2
						Snowmobiling	1.68	1
						Winter Camping	2.71	1
						Birdwatching	-5.82	1
						Hunting	4.88	1

* SI = Specialization Index Score

3.3.2 Primary Activity Groups

Based on the assumption that backcountry visitors may specialize in a variety of ‘sub-activities’ within the activity definition backcountry use (Williams & Huffman 1985), questionnaire respondents were asked to classify themselves into one of 16 primary activity groups (Appendix A, Q. #3). The majority of backcountry (BC2 and BC3) respondents stated that they were primarily hikers (61.2%, n = 158). Smaller numbers classed themselves as

primarily campers (15.5%, $n = 40$) or primarily canoers (7.4%, $n = 19$). The remainder divided themselves among 9 of the other 13 activities listed on the questionnaire (Table 3.6). A small number of respondents ($n = 6$) gave answers that could not be placed into one of the categories and were classed as invalid responses.

In contrast, the majority of frontcountry respondents (FC) considered themselves primarily campers (43.9%, $n = 61$). Those who were primarily hikers made up only 16.5% ($n = 23$) of the frontcountry group and the remainder divided themselves among 13 of the 14 remaining categories. A considerable number of respondents in this group gave invalid responses ($n = 29$).

For purposes of analysis the activity groups with smaller representations (including the activity labelled other) were combined into an *other* category resulting in three major activity groups labelled hiking, camping and *other*. The final nine user sub-groups, based on setting choice and primary activity, and their specialization scores are summarized in Table 3.7

3.3.3 Low and High Specialist Groups

Visitors were also divided into groups based on their specialization score (SI). Following Grimm (1987), quartile divisions, defined by the scores $SI = -2.526$, $SI = -0.089$ and $SI = 2.379$ (see Appendix D), were used to define

Table 3.7 Specialization Statistics for User Sub-groups

User Sub-group	n	Mean SI	Maximum SI	Minimum SI	Range
BC2 Hiker	79	0.17	6.33	-4.35	10.68
BC2 Camper	11	-0.46	5.56	-6.59	12.15
BC2 Other	21	2.58	7.42	-2.88	10.30
BC3 Hiker	60	-1.25	5.60	-7.23	12.82
BC3 Camper	25	-0.21	5.25	-5.37	10.62
BC3 Other	28	0.62	7.10	-5.01	12.19
FC Hiker	22	-1.34	6.53	-8.23	14.75
FC Camper	53	0.50	9.62	-7.17	16.78
FC Other	81	-0.26	11.11	-11.80	22.91
Excluded Cases	58	-----	-----	-----	----

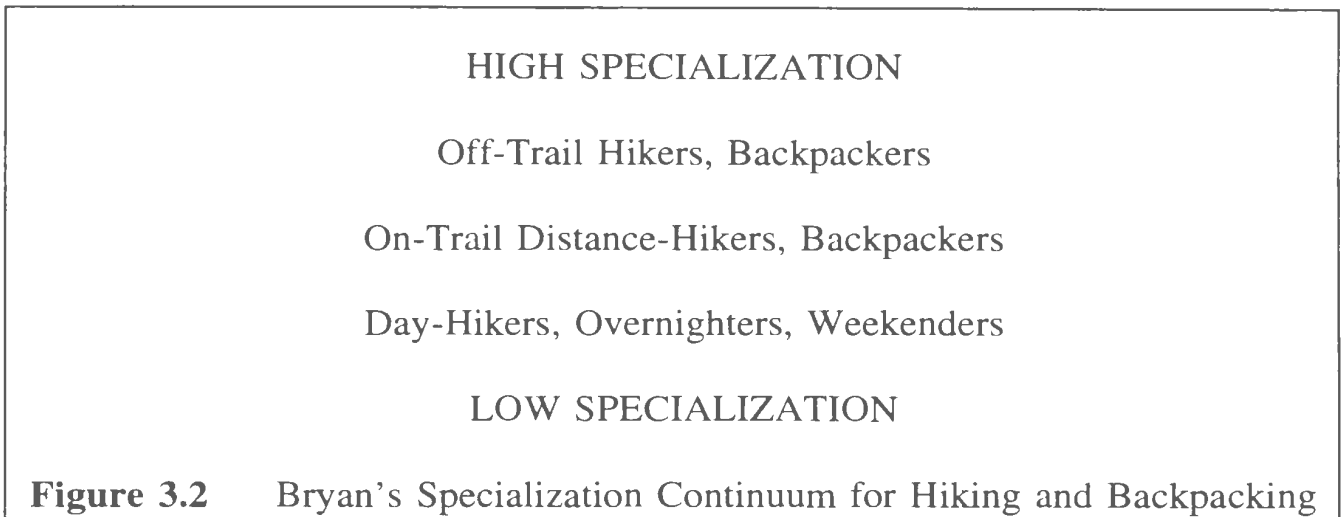
Note: SI = Specialization Index Score

the breakpoints. Those visitors with a score of SI = -2.526 and lower were labelled low specialists (n = 109) and those visitors with a score of SI = 2.379 and higher were labelled high specialists (n = 109). Those with scores around the median were excluded from the analysis.

3.4 Specialization Among Visitor Sub-groups

Is specialization important for differentiating between groups? If specialization score is the dependent variable, what are influential independent variables? Variables which have been suggested in the literature include setting choice (e.g., Bryan 1979; Williams & Huffman 1985) and sub-activity type (e.g., Donnelly, Vaske & Graefe 1986). For example, Bryan (1979:66) provides an example of a continuum which places day hikers (i.e., those visitors expected

at Green Point) at the lower end of a specialization continuum and off-trail hikers (i.e., those choosing Zone 2 backcountry) at the higher end of this continuum (Figure 3.2).

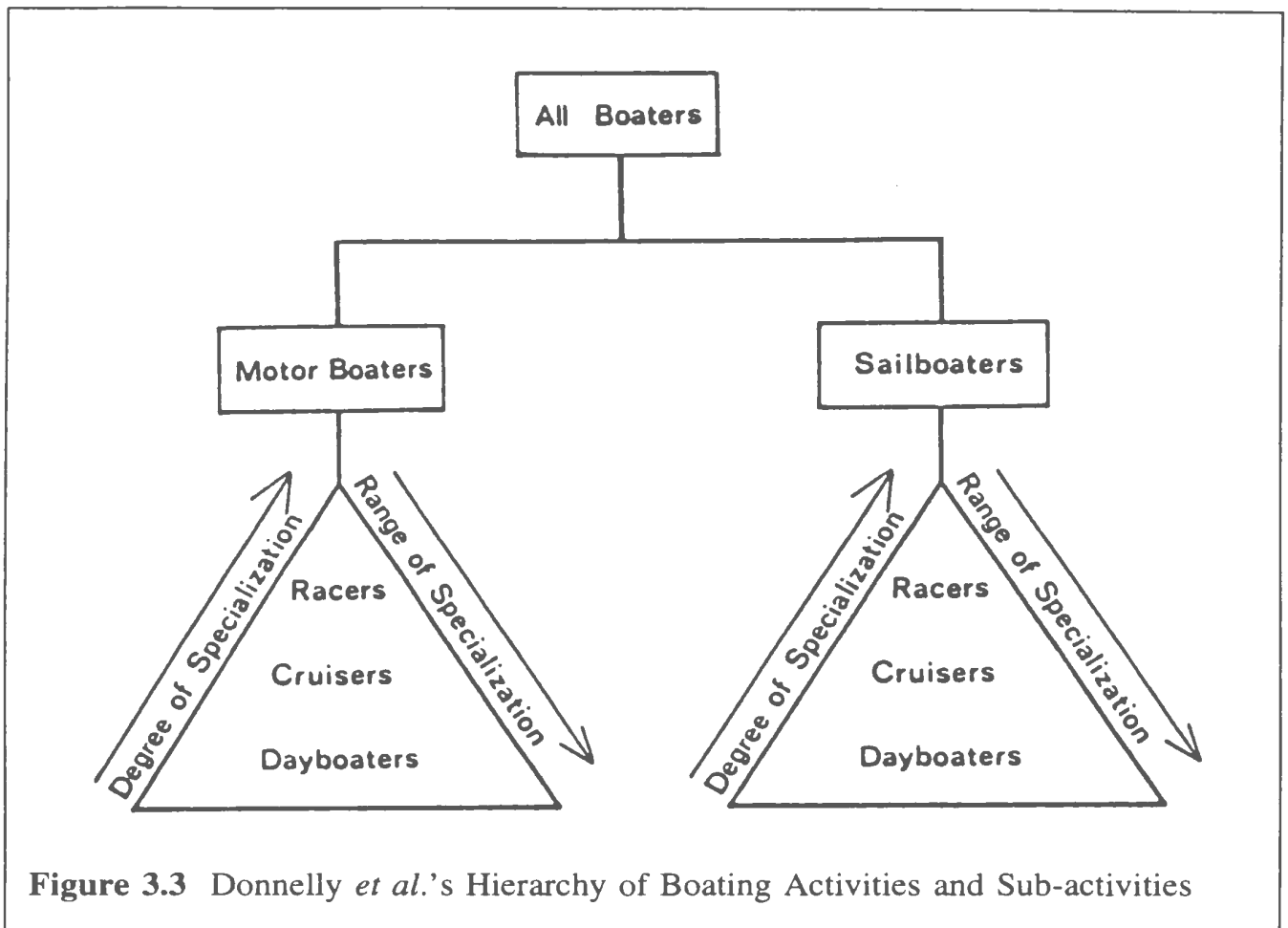


Applying this illustration to the situation at Gros Morne NPR the following hypotheses are proposed:

H1: Visitors to Green Point will have a lower specialization score than visitors to the backcountry.

H2: Visitors to Zone 3 backcountry will have a lower specialization score than visitors to Zone 2 backcountry.

Donnelly *et al.* (1986) suggested that activities which place greater demands on participants may be placed higher in a specialization hierarchy (e.g., boat racing may be placed higher than dayboating) (Figure 3.3). It is arguable that activities such as canoeing, rock climbing, and cross-country skiing place greater demands on participants than hiking. It is also arguable that hiking places greater physical demands on participants than camping. In addition, any



activity which is performed in the more challenging terrain of Zone 2 will place more demands on participants than activities performed in Zone 3. Applying Donnelly *et al.*'s (1986) concept of an activity specialization hierarchy to the situation at Gros Morne NPR the following hypotheses are proposed:

H3: BC visitors whose primary activities are *other* (which includes canoeing, rock climbing etc.) will have higher specialization scores than those whose primary activity is hiking, who will in turn have higher specialization scores than those whose primary activity is camping.

H3a: Visitors whose primary activity is classed as *other* in Zone 2 will have higher specialization scores than those whose primary activity is *other* in Zone 3.

H3b: Visitors whose primary activity is hiking in Zone 2 (no trails) will have higher specialization scores than those whose primary activity is hiking in Zone 3 (trails).

H3c: Visitors whose primary activity is camping in Zone 2 (no campsites) will have higher specialization scores than those whose primary activity is camping in Zone 3 (primitive campsites).

H4: FC visitors whose primary activities are other (which includes rock climbing etc.) will have higher specialization scores than those whose primary activity is hiking, who will in turn have higher specialization scores than those whose primary activity is camping.

The results of testing these hypotheses are briefly explained in the following sections. More detailed discussion will be presented in Chapter 4.

3.4.1 Specialization Levels of Green Point Visitors and Backcountry Visitors

The first hypothesis, that Green Point visitors would have lower specialization scores than backcountry visitors, was not supported. Although the mean specialization score for the Green Point group ($n = 172$, $M = -0.13$) was slightly lower than the mean specialization score for the backcountry group ($n = 266$, $M = 0.03$), there was no significant difference in specialization between these groups.

This result suggests that the index lacks the sensitivity to fully differentiate between these two groups either due to a problem with the index or because these two groups are truly similar in the degree of specialization if not the type of specialization. The FC group (Green Point) includes campers who invest a great deal of time and money in their RVs; whereas, the BC group includes hikers who have a great deal of experience and have acquired high skill levels in their activities. Each of these groups are defined as specialized in this study without necessarily seeking the same kind of park experience. The BC group included visitors who overnighted in Zone 2 and Zone 3 of the backcountry. It was possible that visitors to Zone 3 (BC3) should have been classed with the FC visitors and by classing them with BC2 the results were muddled.

To examine the possibility that visitor groups were not correctly classed, discriminant analyses were used to examine the differences between classing BC3 and FC as one group versus classing BC3 and BC2 together. A stepwise discriminant analysis using Wilks' criteria was run on the standardized variables comprised in the specialization index. In the case of classing BC2 and BC3 together, three variables (comfort in the outdoors, years participated in activity and times participated in last year) of the six variables initially combined in the specialization index (Table 2.2) contributed to the discrimination and achieved an overall accuracy of 83.3%. In particular, 91.9% of

BC users were correctly identified (Appendix G). In the case of classing BC3 with FC a different three variables (equipment value replaced times participated in last year) contributed to the discrimination and achieved an overall accuracy of only 71.8%. Although the results of these discriminate analyses will require cross validation, given the high level of identification between BC and FC visitors, even with shrinkage on cross validation the results will be powerful.

These results suggest that the index used in the current study may have used confounding variables (Ditton *et al.* 1992) since using selected variables provides a stronger differentiation than using all the variables in an additive index.

3.4.2 Specialization Among Visitors to Different Backcountry Settings

The second hypothesis, that backcountry visitors who overnighted in Zone 2 (BC2) would have higher specialization scores than those who overnighted in Zone 3 (BC3), was supported. The BC2 group ($n = 111$) had a higher overall (combined activities), specialization score ($M = 0.56$) ($t_{(222)} = 2.79$, $p < .01$) than the BC3 group ($n = 113$, $M = -0.56$).

This result supports the idea that more specialized individuals seek more primitive settings. One would expect the BC2 setting to attract visitors with more specialized skills because of the extra demands made on individuals during the activity of hiking in trail free terrain. In this analysis most persons were

classed as hikers. Thus, a similar frame of reference in responding to the indicators for the specialization index might be assumed.

Discriminant analysis examining the two backcountry groups (BC2 and BC3) was less powerful than the analysis of the BC and FC groups, with an overall accuracy of 68.4%, both groups having similar rates of correct identification (Appendix G). The variables selected in this analysis (comfort in the outdoors, equipment value and years participated in the activity) were the same as those selected in the analysis of BC2 versus BC3 and FC. The variable equipment value appears to be significant in differentiating between BC2 and BC3 whereas the variable times participated in the last year seems to be important in differentiating between FC and BC. This latter result is not surprising if one considers frontcountry use may have a large proportion of local weekender activity whereas backcountry visitors (a majority of whom are from out-of-province) are likely to visit less frequently.

3.4.3 Specialization Levels Between Activities in the Backcountry

The majority of visitors to both BC2 and BC3 classed themselves as primarily hikers with smaller numbers of campers and very small numbers in other activity categories. Examination of the different primary activity groups within the backcountry setting indicates differences in specialization levels (Table 3.7). To test the above hypotheses (H3, H3a, H3b, H3c and H4) the

activities other than hiking and camping were grouped into a category named *other*. Hypothesis three was supported. Specialization in *other* activities ($M = 1.63$, $n = 43$) was higher than hiking ($M = -0.44$, $n = 139$) which was higher than camping ($M = -0.29$, $n = 36$) ($F_{2,217} = 10.01$, $p < .001$).

The secondary hypotheses 3a and 3b were supported. BC2 visitors have higher specialization scores in hiking ($M = 0.17$, $n = 79$) and *other* activities ($M = 2.55$, $n = 18$) than BC3 visitors ($M = -1.25$, $n = 60$ and $M = 0.97$, $n = 25$ respectively). However, hypothesis 3c was not supported. Though not statistically significant, BC3 campers showed a higher score ($M = -0.21$, $n = 25$) than BC2 campers ($M = -0.46$, $n = 11$) (Table 3.7).

These results are consistent with the idea that people who partake in activities which require more special skills, such as canoeing and rockclimbing (in the group labelled *other*), are more specialized than those who partake in less skill testing activities such as hiking or camping. Further, those who partake in these activities in the BC2 setting are more specialized still than those who perform in the BC3 setting. However, the results show that the expected pattern does not hold for camping.

3.4.4 Specialization Levels Between Activities in the Frontcountry

Camping is the activity in which most frontcountry visitors participate ($n = 53$) followed by hiking ($n = 22$) and smaller numbers in other activities

(Table 3.6). Hypothesis four was not fully supported. The mean specialization scores for frontcountry visitors who primarily participated in activities other than camping and hiking ($n = 81$) are shown in Table 3.6, and though some of these specialization scores are higher than the scores for camping and hiking, each of these activities is represented by numbers too small for meaningful individual analysis. These other activities were combined into an *other* category. The mean specialization score for this *other* group is -0.26 (Table 3.7). The pattern of hikers having higher specialization scores than campers does not hold. Frontcountry campers have a higher specialization score ($M = 0.50$) than frontcountry hikers ($M = -1.34$, $F_{1,73} = 4.49$, $p < .05$).

Though one might expect that *other* activities would have more specialized participants, this was not necessarily the case in the FC setting. The extremely small numbers in activity categories other than camping and hiking made analysis difficult. The wide range of specialization scores in this group (which had individual scores ranging from $SI = -11.80$ to $SI = 11.11$) probably indicates that they cannot be grouped together effectively. If one looks back at the activities represented in the *other* category (Table 3.6) one can see that activities such as birdwatching and wildlife viewing probably do not belong with fishing or winter camping. Frontcountry campers have a higher specialization score than frontcountry hikers. This result indicates that camping and hiking in

the front-country are very different activities from camping and hiking in the backcountry. This idea is also supported by the results for hypothesis one (Section 3.4.1).

3.5 Characteristics of Low and High Specialists

High specialists ($n = 109$) were defined as those persons with specialization scores in the highest quartile, that is, $SI = 2.379$ or higher. Low specialists ($n = 109$) were those in the lowest quartile, $SI = -2.526$ or lower (see Section 3.3.3.). The following section describes key characteristics of these two groups. More detailed data is provided in table form in Appendix E.

High specialists tend to be older than low specialists. The largest age groups for high specialists were between 30 to 39 years (29.9%, $n = 32$) and 40 to 49 years of age (26.2%, $n = 28$); whereas low specialists were mostly between 20 and 29 years old (44.8%, $n = 47$). High specialists were predominantly male (72.2%, $n = 78$). Low specialists showed even distributions of males (48.1%, $n = 51$) and females (51.9%, $n = 55$). Both high and low specialists were well educated with the majority of each group having attained at least one university degree and many having pursued post-graduate studies. The larger number of post-graduates seen in the high specialist group (40.0%, $n = 42$) may be related to being older and thus farther along in studies. High specialists were predominantly employed in jobs related to natural science,

engineering and mathematics (20.8%, $n = 19$) or teaching (19.8%, $n = 18$). The largest number of low specialists were students (24.2%, $n = 23$). High specialists generally command higher family incomes than low specialists. The majority of high specialists' incomes were in the two top categories of \$60,001 to \$70,000 and over \$70,000 (44.1%, $n = 45$). Low specialists were more evenly distributed across income categories but the largest groups were towards the low end of the scale; 18.9% ($n = 18$) reported incomes between \$10,001 to \$20,000 and 16.8% ($n = 16$) reported incomes between \$30,001 to \$40,000.

The majority of both high (38.5%, $n = 40$) and low specialists (43.1%, $n = 44$) came from the frontcountry. This indicates a large range of specialization with representation from both extremes of the specialization continuum in the frontcountry setting choice group. The remaining high specialists were relatively evenly divided between both backcountry setting choices. Most of the remaining low specialists chose to be in Zone 3 (34.3%, $n = 35$) with a smaller number (16.7%, $n = 17$) staying in Zone 2.

Among the high specialists most (44.4%, $n = 44$) classified themselves in *other* as their primary activity. Among low specialists, most (59.6%, $n = 56$) classified themselves as hikers. Similar numbers of high (27.3%, $n = 27$) and low (21.3%, $n = 20$) specialists classed themselves as campers.

A general description of the high specialist in this study is: an older, well-educated professional male with considerable discretionary income who

frequents the FC setting and participates primarily in activities other than hiking or camping. The low specialist in this study can be generally described as a younger well-educated male or female student with a moderate income who also frequents the FC setting and participates primarily in hiking.

3.6 Environmental Attribute Preferences

Seventeen selected environmental attributes rated in importance from 1 (not at all important) to 5 (extremely important) were evaluated using difference of means tests to determine which individual attributes were preferred by different sub-groups of visitors. The results are summarized in tabular form (Appendix H). It was recognized that testing multiple means increases the probability of making a Type I error, however it was decided that this risk was acceptable. Given the nature of the study, identifying false differences was considered less important than failing to identify true differences by use of an excessively conservative test such as Bonferroni's or Scheffe's (Hays 1981). Instead, Duncan's multiple range criteria was selected (Hays 1981). Gregoire and Driver (1987) stress the importance of looking beyond Type I errors and in not overlooking the considerations of Type II errors.

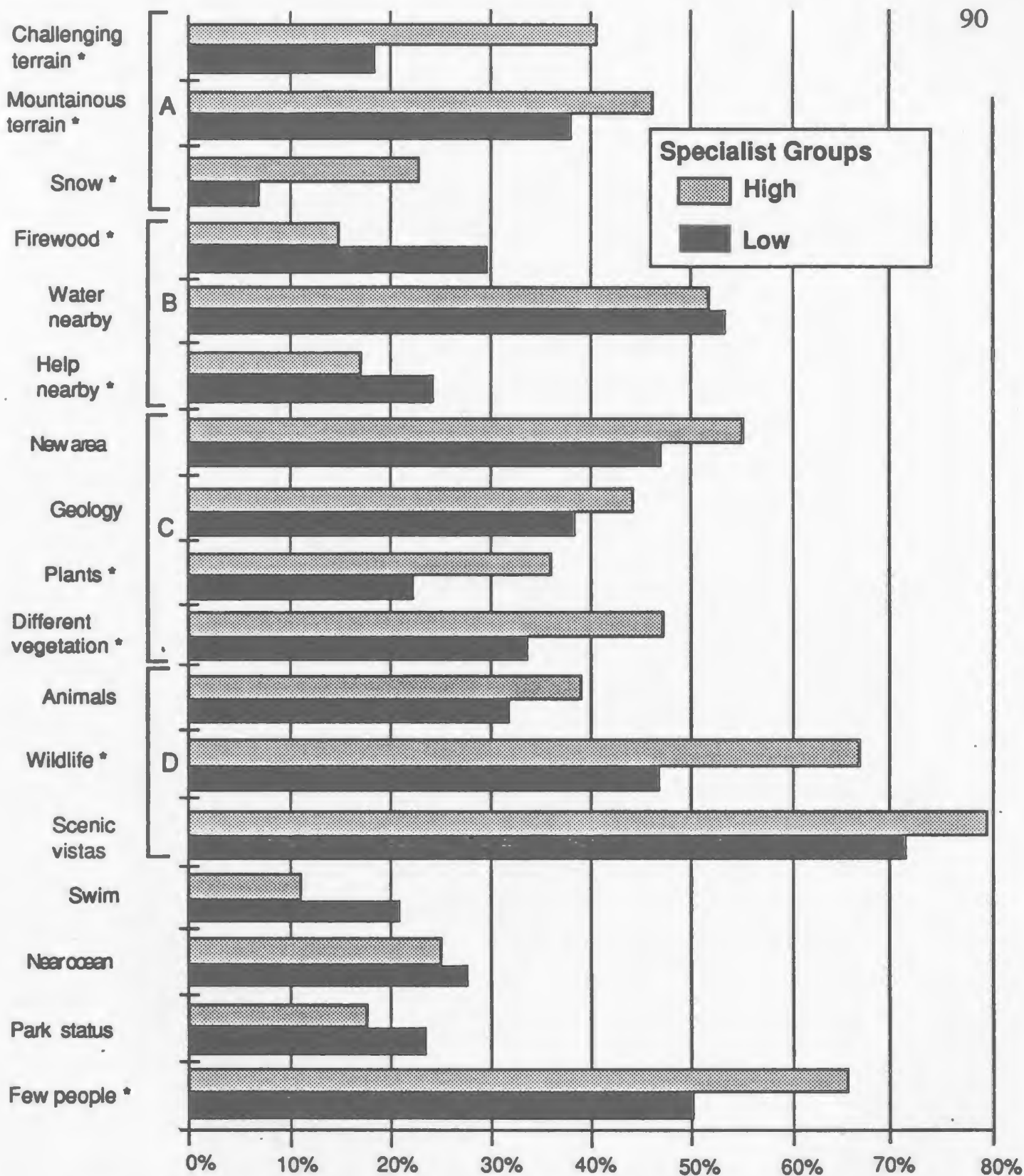
In order to see whether statistically significant differences were substantially different, not just a product of multiple means tests, a visual chart of the combined percentages of "very important" and "extremely important"

ratings given each attribute by different visitor groups was created (Figure 3.4 and Figure 3.5).

The attribute ratings were also combined to create four environmental attribute scales. The first scale, Physical Challenge, was produced by summing the importance ratings given to the three individual attributes: rugged terrain, mountainous terrain, and snow. This scale is internally reliable (Cronbach's $\alpha = .70$) (Nunnally 1967). A second scale labelled Security was made up of the attributes: help not far if needed, easily found drinking water, and readily available firewood ($\alpha = .63$). The attributes of scenic vistas, opportunity to see wildlife and home to large animals were summed into a scale labelled Sights ($\alpha = .76$). The last scale, Uniqueness, was made up of four attributes: unusual local plants, different types of vegetation, unusual geologic features and area which is new or different (to the individual) ($\alpha = .76$).

A high specialization score implies a degree of experience and mastery of activity skills. High specialists are confident in their abilities which leads to an increased enjoyment of the natural sights, a search for increased challenge and independence from external support. Their past experience of environments leads them to seek new activity settings. Based on these suppositions the following hypotheses were put forward:

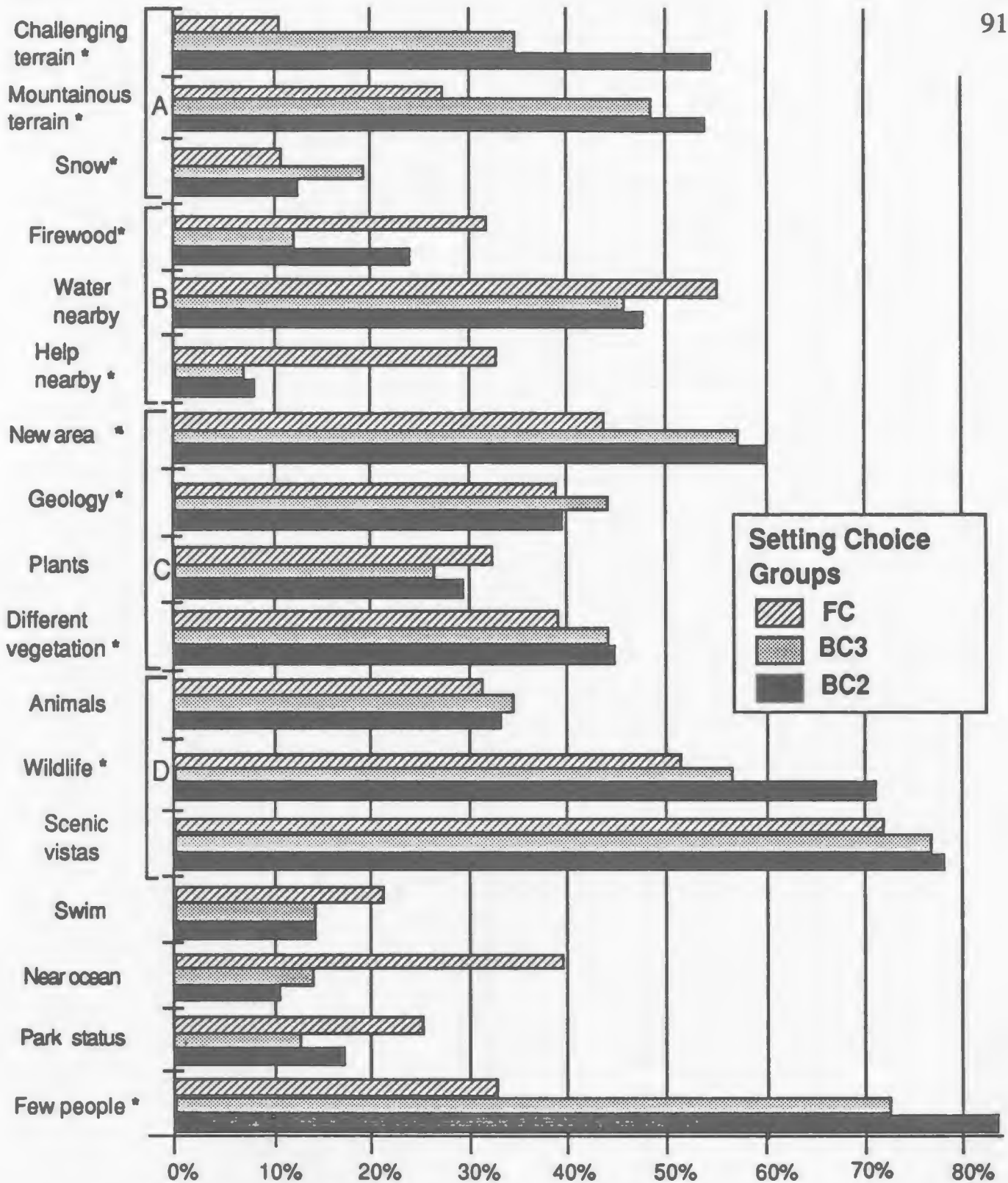
H5: High specialists will have a higher score on the Physical Challenge scale than low specialists.



Notes: * indicates statistically significant difference (Appendix H).

A=Physical Challenge Scale; B=Security Scale; C=Uniqueness Scale; D=Sights Scale

Figure 3.4 Percentage of "Very Important" and "Extremely Important" Ratings of Environmental Attributes by Specialist Groups



Notes: * indicates statistically significant difference (Appendix H).

A=Physical Challenge Scale; B=Security Scale; C=Uniqueness Scale; D=Sights Scale

Figure 3.5 Percentage of "Very Important" and "Extremely Important" Ratings of Environmental Attributes by Setting Choice Groups

H6: High specialists will have a lower score on the Security scale than low specialists.

H7: High specialists will have a higher score on the Sights scale than low specialists.

H8: High specialists will have a higher score on the Uniqueness scale than low specialists.

One can assume that visitors who choose to overnight in Zone 2 of Gros Morne NPR are seeking particular environmental attributes. Zone 2 offers added physical challenge and less security. It could be argued that there are more or better opportunities for natural sights in Zone 2 and this area does offer the opportunity of a unique arctic tundra type of setting. Visitors to Zone 3 are likely seeking similar environmental characteristics but lack the time or resources to travel into Zone 2. Frontcountry visitors are seeking the security of park facilities. The following hypotheses are proposed:

H9: BC visitors will have a higher score on the Physical Challenge scale than FC visitors.

H10: BC visitors will have a lower score on the Security scale than FC visitors.

H11: BC visitors will have a higher score on the Sights scale than FC visitors.

H12: BC visitors will have a higher score on the Uniqueness scale than FC visitors.

3.6.1 Environmental Preferences of Specialist Groups

The high and low specialist groups differed in their ratings of nine of the seventeen environmental attributes examined (Figure 3.4). Both high and low specialists ranked scenic vistas as the most important attribute, giving it a rating of "very important" ($M = 4.03$ and 3.81) (Appendix H). Seeing wildlife was ranked highly by both groups, though the high specialists considered this attribute "very important" ($M = 3.90$) as compared to the low specialists' "quite important" rating ($M = 3.34$). Few signs of people was ranked third in importance by the high specialists and rated between "quite important" and "very important" ($M = 3.64$). The attributes considered least important by the low specialists were snow ($M = 1.50$) and challenging terrain ($M = 2.26$). The high specialists ranked nearby help ($M = 2.19$), water for swimming ($M = 2.12$) and available firewood ($M = 1.97$) as the least important attributes.

Hypotheses 5 and 8 were supported. High specialists rated Physical Challenge more important to them ($M = 8.55$, $n = 109$) than did low specialists ($M = 6.69$, $n = 109$); ($F_{1,217} = 19.59$, $p < .001$). The Uniqueness scale was also rated more important by high specialists ($M = 12.95$) than by low specialists ($M = 11.48$); ($F_{1,217} = 7.70$, $p < .01$). Hypotheses 6 and 7 were not supported.

The expected pattern of high specialists ranking the Security scale less important ($M = 7.52$) than low specialists ($M = 8.50$) did exist, however a statistically significant difference was not found. There was also no difference

between high and low specialists' rating of Sights. Both groups rated this scale highly important ($M = 10.95$, $M = 9.92$ respectively). The lack of difference on the Security scale may be explained by the number of frontcountry campers included in the high specialist group. The lack of difference on the Sights scale is not entirely unexpected as sightseeing is a major component of any park visitor's trip.

3.6.2 Environmental Preferences of Setting Choice Groups

The three setting choice groups differed in their ratings of importance for eleven of the seventeen environmental attributes (Appendix H). Figure 3.5 shows the attribute scenic vistas was rated very important by all three groups (ranked as first or second most important) as was the opportunity to see wildlife (ranked third most important). Whereas BC2 and BC3 rated few signs of people as very to extremely important (ranked first and second most important), FC rated it between somewhat and quite important (ranked eleventh in importance). The attribute ranked as least important by the FC and BC3 groups was the presence of snow. The BC2 group did not rank it highly important either though it ranked above seeing the ocean and available firewood. The FC group did rate seeing the ocean as quite important and ranked it fifth in importance. The FC group ranked drinkable water (second) and nearby help (ninth) considerably more highly than did the BC groups. Help was rated by

FC visitors as quite important ($M = 2.74$) compared to the BC visitors' ratings of somewhat important ($M = 2.05$ and $M = 2.14$).

Hypotheses 9, 10, 11 and 12 were all supported. BC 2 visitors rated Physical Challenge as more important to them ($M = 9.04$) than did BC3 visitors ($M = 8.29$) or FC visitors ($M = 6.23$) ($F_{2,377} = 35.98$, $p < .001$) (Duncan's $LSD < .05$). FC visitors rated Security as more important than either BC3 visitors ($M = 7.55$) or BC2 visitors ($M = 7.32$) ($F_{2,388} = 8.52$, $p < .001$). The latter groups showed no significant difference (Duncan's $LSD < .05$). Sights was rated more important by backcountry visitors (BC2 $M = 11.16$, BC3 $M = 10.71$) than by FC visitors ($M = 10.03$) ($F_{2,377} = 5.53$, $p < .01$). Uniqueness was also more important to backcountry visitors (BC2 $M = 13.17$, BC3 $M = 10.71$) than to FC visitors ($M = 11.53$) ($F_{2,377} = 8.08$, $p < .001$).

3.7 Support for Management Strategies

Twenty one management strategies were selected from among the many strategies which are common to outdoor recreation management. Some were selected from past studies (e.g., Virden & Schreyer 1988) and some (i.e., the cable car) were suggested by Gros Morne NPR personnel since they were being considered for implementation at Gros Morne NPR. There were some recognizable themes to these strategies. For example, encouraging fewer people

in an outdoor area can be accomplished by imposing trail quotas, requiring permits, limiting party sizes, establishing a user fee or otherwise limiting ease of access. The provision of facilities and other assistance are other common management practices; represented in this study by the options of providing pit toilets, installing directional signs, providing warden patrols, and providing more campsites and shelters. Regulation as a management strategy was represented by fining regulation violators, and restricting campfires. Other strategies such as revegetating overused areas and providing information on natural history did not fit a theme as well as the aforementioned items but were also included.

Responses to these strategies were evaluated using difference of means tests to determine if different strategies were favored by different sub-groups of visitors. Visitors' comments also revealed opinions regarding existing park management strategies. They were transcribed and categorized.

3.7.1 Specialization Level and Support for Management Strategies

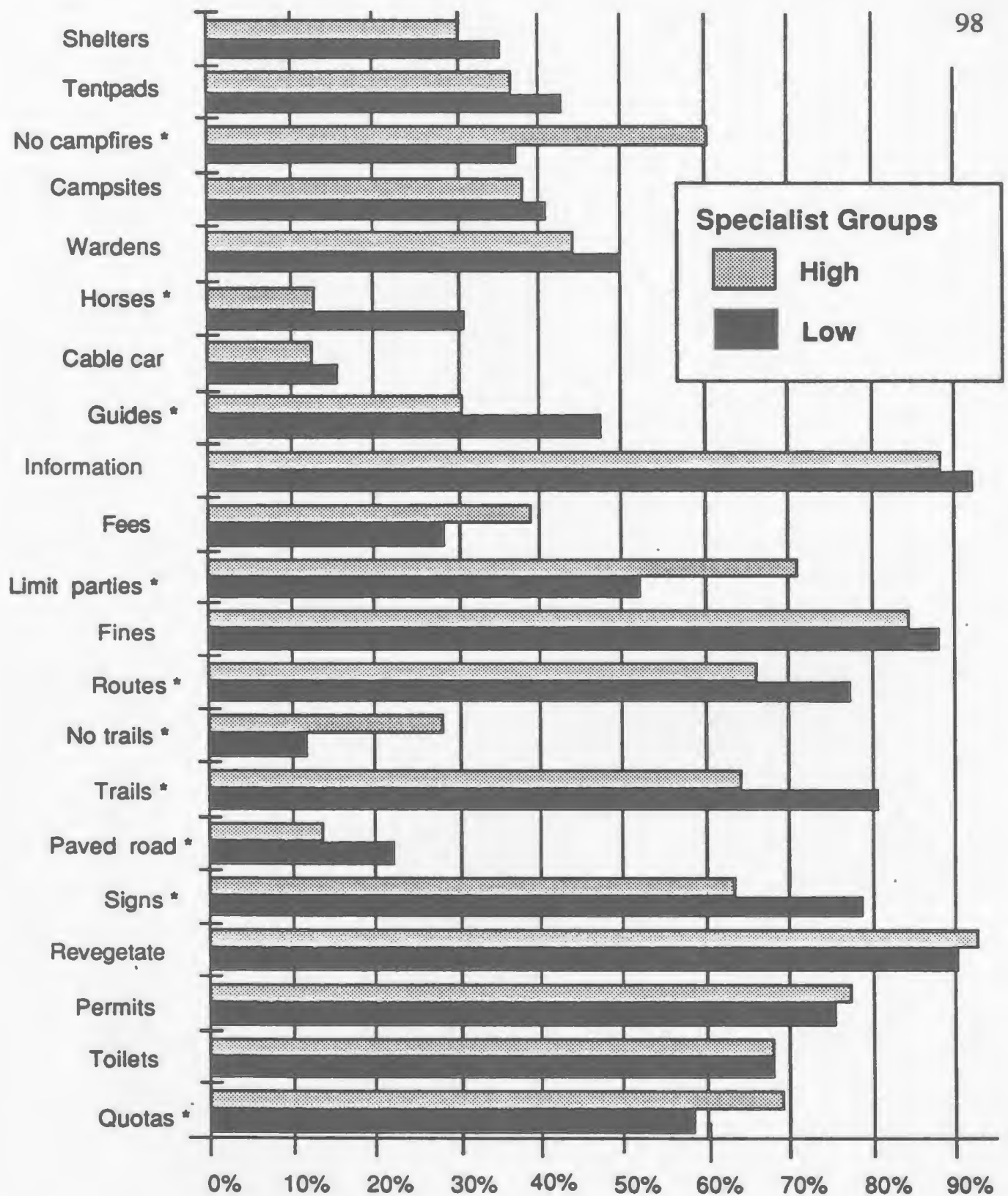
If high and low specialists are truly different groups, one would expect differences in their responses to the management items. High specialists would be expected to support management which allows them a maximum level of self-sufficiency. They would favor minimum development of facilities and assistance, and those strategies which limit the number of other people they

encounter. Low specialists would probably favor management which provided a measure of security, such as providing guided expeditions.

High and low specialists showed significantly different responses ($p < .05$) for ten of the 21 strategies (Figure 3.6). Of these, all supported the pattern of high specialists showing less support for facilities and more support for limited access for people. Although the responses do follow the predicted pattern, the differences between the specialist groups are not as pronounced as the differences between the setting choice groups (Figures 3.5 and 3.6).

Most strategies obtained some level of support from both groups. The highest levels of support were for revegetating overused areas, fining regulation violators and providing information on natural history. These strategies were favored by both groups with no significant differences between their responses (Appendix I). This result supports that of Grimm (1987) who found similar levels of support for management strategies by both high and low specialists.

Providing public access (i.e., cable car) was opposed by both high ($M = 2.00$) and low specialists ($M = 2.17$) and indicates that this is not considered a good national park management option. Grimm (1987) also found opposition to increased public access. Opposition to the strategies of not providing trails by low specialists ($M = 2.41$) and permitting horse use by high specialists ($M = 2.26$) follows the pattern of low specialists favoring easier access such as via park-provided trails or horses.



Notes: * indicates statistically significant difference (Appendix I).

Figure 3.6 Percentage of "Support" and "Strongly Support" Ratings of Management Strategies by Specialist Groups

3.7.2 Setting Choice and Support for Management Strategies

Visitors to the different settings within Gros Morne NPR will probably have different responses to park management. It is reasonable to assume that BC2 visitors would favor strategies which minimized the development of facilities and limited the number of people so as to maintain the 'primitive wilderness' experience. Visitors to Green Point (the frontcountry) would be expected to support management which helped to facilitate their experience. For the most part the pattern of BC2 visitors being 'anti-facility/anti-other people,' the FC visitors being more 'pro-facility/ pro-other people,' and the BC3 visitors being somewhere between, was supported by the results.

Fifteen of the 21 strategies showed significantly different responses ($p < .001$) between the BC2, BC3 and FC visitor groups (Appendix I). Of these, thirteen fit the pattern of BC2 visitors being more 'anti-facility/anti-other people' than BC3 visitors and FC visitors (Figure 3.7). The strategies of imposing trail quotas and requiring BC permits received slightly more support from BC3 visitors ($M = 4.06$ and $M = 4.38$) than by BC2 visitors ($M = 3.99$ and $M = 4.24$).

Those strategies which showed no significant difference between the three groups' responses included: similar levels of strong support for revegetating overused areas and providing information on natural history and similar neutral

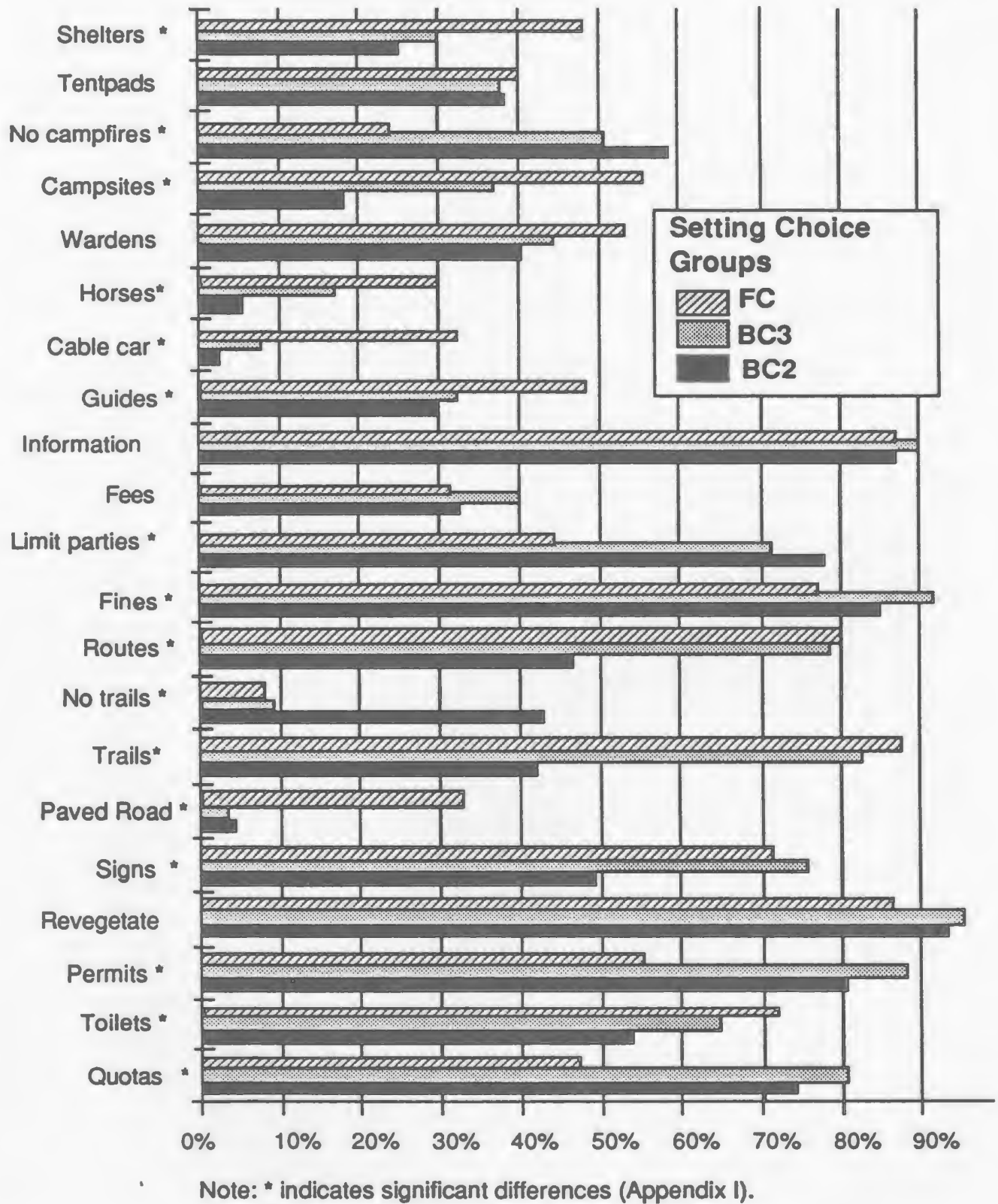


Figure 3.7 Percentage of "Support" and "Strongly Support" Ratings of Management Strategies by Setting Choice Groups

responses to providing tentpads at primitive campsites, providing more warden patrols and establishing user fees (Appendix I).

There was some level of support for most of the strategies (Figure 3.7). The highest levels of support were for revegetating over-used areas and fining regulation violators. The BC3 group showed the strongest support for these two items ($M = 4.58$ and $M = 4.45$). These results suggest two possible interpretations which would require additional support from corroborating studies. First, because the Zone 3 area is trailed and frequented by day users as well as overnight users, it is perhaps more vulnerable to over-use and may be perceived by visitors as over-crowded whereas Zone 2 may as yet not have the same problem with traffic volume. Also, the responses to fining may reflect a stronger need by BC3 visitors to react to more visible violations such as littering along trails whereas BC2 visitors may feel that they are more able to self-police.

A lack of support for a few strategies included opposition to paving access roads by the BC2 ($M = 2.09$) and BC 3 ($M = 2.21$) groups; opposition to not providing trails by the BC3 ($M = 2.35$) and FC ($M = 2.27$) groups; opposition to permitting horse use by the BC2 ($M = 2.09$) group and fairly strong opposition by the BC2 ($M = 1.50$) and BC3 ($M = 1.83$) groups to providing public access (i.e., cable car) to the backcountry (Appendix I). These results also support the pattern of BC2 visitors being more 'anti-facility/anti-people' than BC3 visitors or FC visitors.

3.8 Visitor Comments

Two open-ended questions elicited comments from the respondents. Question #28 (Appendix A) asked visitors to elaborate on how (dis)satisfied they were with their trip. Fifty-five out of 198 Green Point visitors responded with at least one type of comment. One-hundred and sixty-eight out of 266 backcountry visitors responded with at least one type of comment. At the end of the questionnaire visitors were invited to list any additional comments. Fifty-seven of 198 Green Point visitors and 137 of 266 backcountry visitors listed additional comments, many of which were of considerable length.

Both sets of comments were combined and roughly categorized into those regarding the environment; the facilities; the park staff and service; and general remarks about visitors' park experiences (see Appendix F). The most common comments indicated that people were very impressed with the "...beautiful scenery...", (n = 106), and generally enjoyed their experience, (n = 101).

Comments regarding the environment indicated that people liked the unspoiled wilderness and solitude, (n = 83). For example, "...The best thing for me was [sic] the isolation, natural beauty, distance from 'civilization'...." There were several statements which suggested diversity, (n = 23), and challenging, rugged terrain, (n = 20), enhanced visitors' experiences, though for a few people, (n = 10), the challenge proved too difficult, or was more than expected. Examples of these comments include:

The scenery is breathtaking and the ruggedness of the area impressed me. I didn't expect the ruggedness of Newfoundland (at least the west coast). The plant and wildlife was fascinating, especially the Tuckamore forest.

...I would strongly urge Parks Canada to keep this magnificent trail as rough & tough as possible in order to keep the beauty & 'natural' landscape intact. I started at the Western Brook Pond end of the trail found the climb to the top very demanding but would urge Parks Canada to keep the trail demanding. Otherwise, it will be spoiled forever if made too accessible...

The physical demand of the Northern Rim Trail was more than expected, but welcomed.

Concerns about over-development, (n = 18), and human impact, (n = 19)

were reported. For example,

I am particularly concerned about the sad reality that some hikers litter--yes even in the backcountry. At certain points I saw clothing lying around, and at one primitive campsite garbage had been thrown in pit toilets as well as in the outhouse. Perhaps a stronger enforcement of the 'pack in, pack out' idea (as opposed to merely a nice logical idea) might reduce this problem. Also, keep it like it is! 'PRIMITIVE' if hikers don't like it, I feel the backpacking experience is not for them.

...Edges of backcountry ...all had considerable manmade debris--an annual pickup of highly visible plastic etc. would add greatly to enjoyment by others.

...we were concerned about how much impact was apparent e.g., people wandering 'off-trail' left obvious scars & we noted a few tents which weren't at designated campsites...the trampling effect really imposes on the experience...

Blackflies were mentioned sixteen times as a detraction from the overall enjoyment of the park. There were similar number of good weather ($n = 25$) and bad weather ($n = 29$) comments.

Most comments about the existing level of facilities, including the lack of facilities in certain sites, were positive ($n = 58$). Comments such as the following seem to indicate that overall visitors are happy with the variety of levels of facilities provided.

...I want to tell you how impressed I was with Lomond campsite....A wonderfully designed campsite-these are 3 things that were done right: 1. small number of campsites; 2. no electricity; 3. no hot water Please keep it that way!

...The primitive campsites were well kept with very little evidence of former hikers. I hope that NOTHING is changed in this area of the Gros Morne National Park...

Spectacular scenery, wonderfully organized campsites. Self registration is great, quick neat and easy.

The most common complaint, which was often strongly phrased, regarded a lack of maintenance on pit toilets ($n = 12$), "THE BATHROOM AT GREEN POINT WAS TOTALLY DISGUSTING." These came mostly from Green Point visitors. Most comments about the quality and variety of trails were positive, and several recommendations for new trails and loop trails were volunteered ($n = 13$). However, once again there was a desire for more

information about trails and about what is found along trails. This is illustrated in the following comments,

...I found most of the trails to be very good, however I would like to see more interpretive trail brochures like the one produced for the Green Gardens Trail...

I found information re: hiking trails scanty & poorly presented....

The way in which information is provided could be greatly enhanced....More visual displays such as maps showing trails, their length and difficulty and more illustrative descriptions of geologic features with pictures of specific features in the park would be much appreciated. To say it's a geologist's paradise leaves too much to the non-geologist's imagination.

Findings indicate that a significant number of park visitors are frustrated by the lack of maps and accurate information available to them upon arrival or in planning their trips prior to arriving at Gros Morne NPR (n = 122).

Examples of these comments include:

We had difficulty in obtaining an accurate impression of what was essential for us to bring or prepare for with respect to the Long Range Trail...it was like pulling teeth to get it prior to our trip...

We enjoyed Gros Morne however were upset by the poor information we were given at the reception center. I expect more of Parks Canada...

Though there were some positive comments on information services (n = 19), for example, "Gros Morne personnel was exceptional - friendly and well informed....," it was repeatedly reported that such information was lacking, with

comments ranging from staff being uninformed beyond routine questions and providing poor or inaccurate information, to a general desire for more or better brochures, topographic maps and trail makers. The second half of the above positive comment concludes with the statement that "...detailed terrain information, e.g., trail recommendations, would be helpful." If accurate and helpful information does exist, it is not being adequately presented to these visitors.

Twenty-six comments described 'staff' as helpful/friendly, though thirteen reported 'staff' as uninformed and lacking accurate information. It appears that some staff, particularly those at the VRC are not perceived as sufficiently knowledgeable. Examples of this type of comment include:

...The girl at the desk was very poorly informed. She gave us inaccurate information about the length of the hike & about the location of the campground....It would have been a real problem for us if we had started our hike later in the day...

...the staff at the visitor center was poorly trained and not able to offer suitable information, maps or safety advice on backcountry hiking...

Positive comments about knowledgeable 'staff' appear to refer to wardens, "...good experience with warden at Birchy Head Warden Station (first name Paul) - provided excellent information in very friendly manner...", although they were not always sufficiently available. This researcher had similar experiences when trying to obtain accurate information about backcountry conditions. VRC

attendants were lacking in specific knowledge about backcountry trails and conditions and though it was suggested that a warden would be able to assist, wardens did not appear to be readily available.

As mentioned above, one of the most common comments was that visitors had an enjoyable experience ($n = 101$). Only ten comments suggested a disappointing experience. As the research questionnaire became a part of the experience for visitors, it is interesting to note that there were only two somewhat negative comments, "...feel that questionnaire is too one-sided, neglects older RV pop." and "questionnaire too long & complicated for general public to complete," whereas six comments specifically reported people enjoyed it or thought it a good idea. It was remarked that friendly people (not necessarily staff) enhanced experiences ($n = 16$), though nine negative comments were made about human presence in the form of pets, noise, litter, and large recreational vehicles; for example, "...too many dogs..." and "...I also don't like the big campers in front of my view of the ocean."

Comments were recorded by the categories high/low specialists, or neither, but there were no clear patterns in the responses to indicate that high specialists feel differently than low specialists. For example, of the remarks about beautiful scenery roughly 25% were made by high specialists and 25% by low specialists. This pattern of approximately one quarter of comments being made by each high and low specialist group occurred for most comment types. A few

exceptions were positive comments about trail conditions. Here, more high than low specialists liked the absence of trails and use of a compass, liked the existing trails, or had suggestions for new trails. More low than high specialists had complaints about existing facilities and wanted more guidance or trail markers. These comments coincide closely with the responses regarding management strategies, although they may be more useful in providing specific examples for management to consider.

4.0 DISCUSSION

This study investigated the usefulness of generic indicators in creating a specialization index with which to measure specialization across the diverse sub-activities of backcountry use. It was anticipated that a measure of specialization would create a description of Gros Morne NPR backcountry visitors useful in implementing VAMP. Relationships between activity specialization, setting choice, primary activity, preferences for selected environmental attributes and management strategies were explored.

This chapter will address each of the objectives outlined in section 1.6. It will briefly recap the literature related to each objective and compare the results obtained in this study with those of other studies. Section 4.1 will discuss problems encountered using the specialization index in this and other studies, and conclude with suggestions for future research. Section 4.2 will discuss the preferences of visitor groups for different environmental attributes. Section 4.3 will summarize visitor groups' level of support for management strategies. Section 4.4 will describe frontcountry and backcountry visitors' characteristics and comments, and discuss implications for park management and the implementation of VAMP at Gros Morne NPR. Finally, this thesis will conclude with recommendations for Gros Morne NPR managers and suggestions for future research.

4.1 The Specialization Index

The first objective of this research was to construct a specialization index using generic indicators and use this index to assess the relative degree of specialization of different visitor groups. In past studies, specialization indices have been used successfully to segment visitors into meaningful groups. The concept of specialization has an intuitive appeal as a way of thinking about visitor preferences. However, there are operational weaknesses in creating specialization indices which include: 1) lack of a standard rational methodology (Kuentzel and McDonald 1992, Watson and Niccolucci 1992, Grimm 1987); 2) difficulty in the selection of appropriate indicators (Donnelly *et al.* 1986) or dimensions (Kuentzel and McDonald 1992, Watson and Niccolucci 1992) to represent specialization; 3) lack of comprehensiveness (Williams 1985, McIntyre and Pigram 1992); and 4) problems related to using a composite index with equal weighting for each variable (Ditton *et al.* 1992, Watson *et al.* 1991, Kuentzel and McDonald 1992).

The lack of a standard method in applying the concept of specialization to various case studies makes it difficult to compare the results of these studies. Kuentzel and McDonald (1992) pointed out the lack of agreement between studies as to what measures define the dimensions of specialization. They cited the examples of Williams and Huffman (1986) and Chipman and Helfrich (1988) each of whom used number of magazines to represent, respectively, the

dimensions of activity involvement and centrality to lifestyle. Lack of a standard rational method is also discussed by Watson and Niccolucci (1992) who suggest that there is little theoretical basis for selecting dimensions to represent the specialization concept, that many studies depend too much on intuition and, that principal-components and factor analytic techniques would provide a better mathematical method for applying the concept of specialization.

The current Gros Morne NPR study also illustrated limitations of the use of the specialization index. Specialization scores were used to define visitor groups and to differentiate between visitor groups classed by setting choice and activity type. Groups with similar activity specialization scores were quite heterogenous in their views on the desirability of different settings. Interestingly, the majority of both high and low specialists (as defined by their individual specialization scores) were from the Green Point (frontcountry) group. The very wide range of specialization scores in this group suggests that the backcountry groups may be mid-level specialists at least in so far as defined by this index. Perhaps the national park environment is not the type of recreation setting that high-specialist hikers seek. Once an area is designated a national park, it is changed if only in the way it is perceived by people. It becomes better known and therefore attracts more people, it falls under the influence of agency regulation which limits visitors' freedom to some extent, and facilities are installed which reduce the risk or challenge of the environment.

In the current study, the use of an additive index and multiple generic indicators led to an unexpected result. Visitors to Green Point (frontcountry) did not differ in their degree of specialization from visitors to the backcountry. However, specialization scores did appear to differentiate between backcountry visitors grouped according to setting choice and chosen activity type. When the visitors were divided into these groups, differences between the frontcountry and backcountry groups (BC2 and BC3) became more apparent.

These results suggest some problems with the choice of indicators to represent specialization across the broad array of sub-activities represented in the Gros Morne study. Wording the indicator to encompass a diversity of activities further blurs the discriminating power of the indicator. For example, although the listing of specialty equipment (boots, compass and non-impact camping gear) would identify more specialized hikers, the indicator used in this study was total value of equipment. The total equipment cost of the specialized hiker's equipment is similar to that of the RV camper who uses an RV for the weekend. Kuentzel and McDonald (1992) also noted problems with indicators such as equipment value because the initial outlay may be high among less experienced users while costs decrease over time with more experienced users.

In order to encompass different activities, generic indicators for the involvement dimension of specialization were open-ended. This format elicited very little response which led to the exclusion of these potentially discriminating

variables in the current study. The problem of choosing appropriate indicators for different activity groups, noted in past studies (e.g., Donnelly *et al.* 1986), have contributed to the lack of distinction between Green Point and backcountry visitor specialization in this study.

Recent literature notes problems related to using multiple indicators, which may introduce confounding variables, in an additive index (Watson *et al.* 1991, Kuentzel and McDonald 1992, Ditton *et al.* 1992). The same overall index score can be obtained from a variety of combinations of scores (Watson *et al.* 1991). The results of the Gros Morne study also indicated that using an additive or composite index may not fully represent the complexity of the specialization process. For example, the very large amount of money spent on RV's may greatly skew the equipment value item in the index and inappropriately boost the specialization index for respondents who score low on other indicators. An adjustment or weighting could be used to make the index measure RV campers and backpackers on a similar scale. However, weighting based on researcher intuition introduces subjective bias (Watson *et al.* 1991). The effect of weighting index items was beyond the scope of the present research but may be an avenue for future research if a standard rational method for assigning weights can be determined (Watson and Niccolucci 1992).

4.1.1 Specialization Index: Comparison of Frontcountry and Backcountry Visitors

Contrary to the study's hypotheses, Green Point visitors did not differ from backcountry visitors in their degree of specialization when measured by the index used in this study. These two groups may be truly similar in activity specialization level, albeit in different activities. The largest activity group among Green Point visitors indicated they were campers whereas the majority of backcountry visitors indicated they were hikers. Definitions for primary activities were not given to respondents who were free to 'self-define' what each involved. For example, the label 'camping' may have been interpreted as recreational vehicle (RV) camping by visitors at Green Point and as tent camping by those in the backcountry. Specialization for these two 'sub-activities' probably should not be measured in the same way, as doing so may produce equivalent summed scores. Williams & Huffman (1985) describe a situation wherein specialization can focus on different attributes of the recreational experience. For example, Green Point visitors may focus on equipment and invest heavily in their recreational vehicles whereas backcountry visitors may focus on acquiring outdoor skills. Each group will attain 'high' specialization scores though different elements of the activity are being measured by the index.

The results of this study support the idea that elements or dimensions of specialization, and the indicators that represent them, need to be examined individually rather than as a composite score (Watson and Niccolucci 1992, Watson *et al.* 1991). Recent literature suggests some alternative methods for examining specialization including cluster analysis (McIntyre and Pigram 1992), principle-components analysis and factor analysis (Watson and Niccolucci 1992). However, the strength of the specialization index method is its promise of easy application. Principle components and factor analysis require mathematical transformations which often make interpretation in terms of "real-world" applications difficult.

The focus of specialization can be on elements other than the activity component of recreation, such as setting. Williams & Huffman (1985) have suggested that measuring specialization by activity alone may not be a sufficient measure of recreation specialization. It may be that setting context is a factor in preselecting visitors who are more or less equivalent in activity specialization levels. The fact that the population of visitors studied was drawn from one park, albeit different areas within the park, may have limited the possible range of specialization. Wellman *et al.* (1984) encountered similar problems in their research examining flat-water canoeists. It may be that only mid-level specialists come to Gros Morne NPR whereas very high specialists frequent other locales, in which case one is attempting to differentiate amongst a

homogenous activity group. In past research the specialization index method used to successfully segment visitor groups tended to focus on narrowly defined, skill-oriented activities, for example, river rafting (Grimm 1987). Using an index that emphasizes skill-oriented dimensions to differentiate between participants in less skill-oriented activities, such as hiking and camping, may not be appropriate. The construct of recreation involvement (McIntyre and Pigram 1992) provides a method for examining more generic and less skill-oriented activities such as camping and avoids the focus on equipment or skill found in the current specialization index.

4.1.2 Specialization Index: Comparison of Setting Choice Groups

Evidence that activity specialization may require a setting context is indicated by the results for the two backcountry setting choice groups. Visitors who chose the Zone 2 setting, which demands more skill and experience, have a higher degree of specialization than those who chose the Zone 3 setting. When these groups are further divided into those who chose one backcountry sub-activity (i.e., hiking, camping or *other*) as the primary outdoor activity, more patterns of specialization are noted. In the case of hiking, those who hiked in Zone 2 are more specialized than those who hiked in Zone 3, who are, in turn, more specialized than those who hiked in the frontcountry. This result supports Bryan's (1979) suggested continuum of hiking and backpacking specialization.

A reverse pattern is noted in the case of camping. Frontcountry campers have higher specialization scores than Zone 3 campers, who are higher than Zone 2 campers. It appears that specialist campers are focusing on a particular type of camping activity and on different setting choice elements than specialist hikers. This is not unexpected if, for example, specialist campers are RV users who require a specific type of setting which includes roads and RV hook-ups.

4.2 Preferences for Environmental Attributes

The second objective of this study was to examine the relationship between specialization and preference for selected environmental attributes. The Gros Morne study examined preferences for selected environmental attributes of visitors divided on the basis of specialization score (high, low) and of setting choice (BC2, BC3, FC).

Some results from the current study seem to support Virden and Schreyer (1988) and their examination of specialization as an indicator of environmental preferences. They found that high specialists expressed a preference for rugged terrain, few facilities and limits on numbers of hikers, whereas low specialists expressed preferences for conveniences such as well-maintained trails, available firewood and directional signs (Virden and Schreyer 1988). The Gros Morne study also found that high specialists differed from low specialists in their preferences for certain environmental attributes. There were statistically

significant differences demonstrated for nine of the seventeen attributes; seven were substantially different. High specialists rated physical challenge (which included the attribute of rugged terrain) and the presence of few people more highly than did low specialists. Low specialists rated facilities such as firewood and nearby help more important.

Schreyer and Beaulieu (1986), using a different approach to measuring specialization than the current study, found a lack of relationship between specialization and type of attributes preferred. The Gros Morne study also found a weak relationship between specialization level and preference for environmental attributes. Environmental attribute preferences were better explained by dividing visitors by setting choice than by dividing visitors by specialization. These results support the idea of a visitor management plan that divides visitors based on their setting choice and that provides information about the type of attributes to expect in different park zones. A plan based on the ideas of the ROS framework has certain practical advantages over using specialization as a management tool. The management of physical areas (i.e., zones) is already a part of the NRMP and would therefore be easier for managers to both understand and implement. Although the specialization concept is a nice way for managers and park staff to structure their thoughts about visitors, as in the "thumbnail sketches" required by the VAG profiles, it does not appear to offer a practical application as a means of dividing visitors

into homogenous groups, whereas the idea of describing areas or zones which provide different setting opportunities for visitors supports the ideas suggested by Clark and Stankey (1979) and is consistent with the idea that VAMP needs to be reconciled with the existing zoning system (Graham, Nilsen and Payne 1987).

4.2.1 Management of Different Setting Choice Groups

The results of this study indicate that dividing visitors based on setting choice may be more useful than dividing visitors based solely on specialization level. For example, dividing backcountry visitors into BC2 and BC3 travellers provides better groups for management planning. BC3 visitors often have more in common with frontcountry visitors than with BC2 visitors. For example, BC3 and FC visitors have similar levels of support for more facilities such as pit toilets, directional signs, trail provision, and marking routes. BC2 visitors differ from both these groups in their lower levels of support for these options. There is higher support for trail quotas and for requiring backcountry permits from BC3 visitors than from BC2 visitors, as well as the highest levels of support from BC3 visitors for fining regulation violators and for revegetating overused areas. These responses suggest that BC3 visitors are sensitive to the numbers of people allowed in the area, hence the desire for quotas and permits, and to the visible effects of too many people such as littering and damage to

plants, which requires the enforcement of regulations to protect and to repair the environment. Zone 3, particularly the James Calaghan Trail, is quite barren in parts and other visitors are easily visible at a distance. Litter which might be overlooked in more dense vegetation stands out and this area is accessible by day hikers as well as overnighers.

The Gros Morne study did not set out to investigate the issue of crowding and there were no items on the questionnaire which specifically addressed the question of crowding. However, one possible interpretation of the results is that BC3 visitors are beginning to perceive the area as crowded. It has been suggested that modifying behavior, not limiting numbers, is the solution to problems related to crowding (Hendee, Stankey and Lucas 1990). There was no marked pattern of complaints regarding crowding in the visitor comments which suggests that the issue, if there is one at all, is not yet serious. However, given the nature of the James Calaghan Trail (a focal point in the park which attracts a mix of all visitor types), Gros Morne NPR managers should consider monitoring visitor comments and feedback regarding their perceptions of this area.

BC3 visitors appear to share more similar environmental attribute preferences with BC2 visitors than with FC visitors, particularly in their preference for few people. However, BC3 visitors do not like the same level of physical challenge for which BC2 visitors indicate a preference. BC3 visitors

seem to represent a group who desire some level of guidance and facilities but also want to experience more of the park's environmental attributes than are accessible from the campgrounds.

This study examines the relationship between specialization and preference for selected environmental attributes. However, incorporating environmental attribute preference into an index type of measure continues to prove difficult since there are so many environmental variables, and because preference for certain environmental attributes is not necessarily a linear relationship, placing them along a single continuum is problematic. A multi-continuum concept, like that described in the ROS framework (Clark and Stankey 1979) offers a practical solution to this complex problem.

4.3 Support for Management Strategies

The third objective of this study was to test the relationship between specialization and support for management strategies. One reason for dividing visitors into groups is to identify useful patterns of recreation and desires for facilities. Therefore it was useful to demonstrate the utility of specialization in defining visitor profiles that differed in their support for different management strategies (Ditton *et al.* 1992, McIntyre and Pigram 1992). This study examined levels of support for management strategies by visitors divided on the basis of specialization score (high and low) and of setting choice (BC2, BC3, FC).

Specialization scores were able to describe variation in levels of support for ten of twenty-one management strategies. Gros Morne NPR high specialists showed less support for providing facilities such as signs and trails than did low specialists and higher support for limiting numbers of people. These results are similar to those of previous studies that suggest an emphasis on high support for facilities in the case of non-specialized hikers (Williams and Huffman 1986, Virden and Schreyer 1988).

It is difficult to compare the results of the current study to that done by McIntyre and Pigram (1992) due to a lack of common methodology. But their Cluster 1 group (low on prior experience, familiarity and centrality and high on attraction and self-expression) "... were most critical of the adequacy of facility provision." whereas Cluster 2 (high in prior experience, familiarity, attraction, and centrality, lower in self-expression) "...were least impressed...with management actions and least critical of facilities." (p. 12).

The results of the Gros Morne NPR study showed that classifying visitors by setting choice rather than by specialist score produced marked differences in levels of support for sixteen of twenty-one management strategies. The pattern of support shows BC2 and BC3 differing substantially from FC regarding strategies that limit numbers of people and BC3 and FC differing substantially from BC2 on strategies that provide guidance in the form of trails and signs.

However, BC2 and BC3 differ substantially from FC regarding the provision of extensive facilities such as shelters and paved roads.

The results of the current study, which show general support from high and low specialists such as revegetating overused areas, fining regulation violators and providing information on natural history, are similar to the findings of Anderson and Manfredo (1985). One difference was that the Gros Morne study's result generally supported the provision of pit toilets which contrasts with the findings of Anderson and Manfredo (1985). The level of support given by BC2 and BC3 groups was significantly different; BC3 groups showed a higher level of support for this strategy.

The differences between levels of support for management strategies by different visitor groups lends support to the importance of segmenting visitors. Clearly the idea of managing park resources to cater to an "average visitor" is not only undesirable but unlikely to satisfy either park managers or visitors. By segmenting visitors into relatively homogenous groups, park managers can assess whether to encourage certain visitor groups, such as RV campers, who may require special facilities, to participate in areas outside the national park which can provide them with a satisfying experience. Managers can then focus on providing visitor groups whose activities are more appropriate in a national park setting with information that will allow them to choose the area best suited

to their requirements for a satisfying experience and will promote public support for each national park's heritage conservation goals.

4.4 Visitor Profiles

The fourth objective of this research was to provide a description of frontcountry and backcountry visitors for use in implementing VAMP at Gros Morne NPR. One aim of VAMP is to describe visitor activity profiles which allow park managers to assess activities in terms of park policy objectives. These include providing diverse opportunities for a variety of visitor activities which respect the ecological integrity of the park, providing a minimum of facilities, and promoting public support for the Canadian national parks system and the purpose of each national park.

The type of information required for these profiles includes activity descriptions, market characteristics, benefits and experience sought, and service requirements from the visitors' point of view (Figure 1.7). This study contributed this type of information in the form of primary activity identification and specialization levels among activity groups; socio-economic descriptions, such as visitor origin and education level; visitor groups' preferences for environmental attributes (setting) plus comments which addressed benefits sought by visitors; visitor groups' levels of support for management strategies

plus comments which addressed management issues such as providing information and trails.

4.4.1 Visitor Characteristics and Comments With Implications for Management

To tailor specific management techniques to suit the diversity of visitor needs and park goals, park managers need to have accurate information about the visitors to their management area. Visitor characteristics which emerged from the present study may be especially useful to park managers. One interesting characteristic is that a large number of park visitors are highly educated. With this information park managers can develop interpretation materials which cater to this more educated audience. Secondly, a significant portion of visitors to all areas of the park are teachers. This presents the opportunity of providing take-home materials which can make available the ideals of the national park experience to students. Each of these management possibilities complements the VAMP objectives of the 'soft' approach (i.e., education) to visitor management as opposed to the 'hard' approach (i.e., regulation).

Data about visitors to Gros Morne NPR's backcountry indicate that the majority are male; in contrast visitors to the frontcountry comprise a relatively equal gender mix. If the CPS wants to promote public support for national

parks, they appear to be missing a substantial audience and may want to target promotional material to include women. More significant is the fact that most visitors to the backcountry are from out-of-province. This suggests the desirability (confirmed by visitor comments) for information packages, aimed at people unfamiliar with the area, available for easy distribution out-of-province.

Feedback from park visitors is an important component of VAMP. These comments give park managers valuable insight into visitors' satisfaction and dissatisfaction with current management. Important comments found in this study addressed a general dissatisfaction regarding the lack of information available to park visitors. As represented in the examples in Section 3.8, visitors want better access to accurate information on a variety of topics: directional information about trails and routes, educational materials regarding the special area attributes, such as the geology, flora and fauna of the area, and special requirements for camping in the area. People expect to obtain brochures and accurate map information when they arrive at the park. Some suggested additional maps and books should be made available for sale. Many people suggested they would appreciate interpretive information about park characteristics, such as the tuckamore, other arctic-type vegetation and the unique geological formation which gained Gros Morne NPR its world and national status. People indicated that obtaining information in advance of their trip, so as to arrive prepared, is important. They want to know what equipment

they will need. For example, blackfly netting is essential. These specific examples support a more general desire expressed in the high level of support for the management option "provide more information" and give park managers clear directions towards ways of fulfilling the mandate to promote public understanding.

4.5 Final Conclusions and Recommendations

The specialization index developed in this study is not the best tool to provide information for park managers. Better information, gathered by dividing visitors into setting choice groups and by reading visitor comments, provided park managers with three important pieces of information. First, the profile of backcountry visitors indicates that many are highly educated and from out-of-province. Second, the VAG 'adventurers' is not a homogenous group: backcountry visitors in Zone 3 have some different expectations than those in Zone 2. Third, visitors from all areas of the park indicate a need for more accurate and in-depth information and interpretation.

A time- and cost-effective method to obtain current feedback for VAMP is to ask visitors to complete a comment card at the end of their visit. The findings of this study reinforce the importance of transactive planning and the need for continuing active participation of park visitors.

The concept of specialization is useful as a means for park managers and others involved with providing recreation opportunities to people, to think about the range of opportunities required by recreationists seeking different experiences. Several researchers have made the point that the multidimensional aspect of specialization needs to be better represented and the concept of specialization has to move away from the single linear continuum. This position does not yet offer practical techniques which can be used by park managers. One advantage of the specialization concept is its usefulness as a way of thinking about visitors by placing them along a continuum. This thinking could be expanded into a multi-continuum concept looking at continuums of activity, environment and social.

However, a generic type of index such as the one employed in this study appears to be impractical. The purpose of using a specialization index is to divide potential recreationists into homogenous groups who are seeking more or less similar experiences. As this study has shown, specialization scores can measure different elements and produce groups who may share similar high scores but who are, in fact, seeking more or less different experiences (i.e., specialist campers seeking RV hookups and specialist hikers seeking few people). If the idea of a specialization index is to be pursued, it must focus on a more narrowly defined group. Evidence from this study which supports the notion that a successful index must focus on a more particular group is the

partial success of this study's index in differentiating among visitors to the backcountry (i.e., BC2 and BC3 visitors) who were for the most part self-defined hikers. The study sample was limited to visitors to Gros Morne NPR and generalization of these results to other settings has not been demonstrated. Future research should examine visitors to more than one national park, possibly comparing national park visitors with visitors to other recreation areas.

To summarize the findings of this thesis:

- 1) Dividing visitors into homogenous groups (segmentation) is an important step in visitor management.
- 2) The specialization index used in this study, while offering some discrimination, was not the best method of dividing visitors at Gros Morne NPR. Dividing visitors by setting choice proved to be a better discriminator of homogenous groups.
- 3) Visitors to the backcountry are not a homogenous group.
- 4) There is some support for the *concept* of specialization as a useful way to think about visitor groups. Such a device provides a structure for incorporating valuable local knowledge and park staff experience.
- 5) Collecting visitor comments is a relatively low-cost, easy method for obtaining valuable information about visitors; transactive planning is valuable.
- 6) Visitor management based on providing setting opportunities (as with the ROS) is a good idea that can link VAMP input with the NRMP zoning concept.

Future research should consider:

- 1) Continuing to fine-tune the indicators which represent dimensions of specialization.
- 2) Examining the question of whether dimensions of specialization progress along a linear continuum.
- 3) Examine the interaction between Gros Morne NPR and its regional context, as this was not done in the current study.
- 4) Examine visitors to other national parks and compare them with visitors to other recreation areas to answer, among others, the question of whether national parks only attract mid-level specialists.

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Appendix A

QUESTIONNAIRE



Environment
Canada

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Canada

Canadian Parks
Service

Services canadien
des parcs

VISITOR STUDY: BACKCOUNTRY USE IN GROS MORNE NATIONAL PARK

Dear Backcountry Visitor,

Most national park users are concerned about how Canada's national parks are being managed. Unfortunately, planners and managers only have a sketchy idea about you - the backcountry visitor. Without information about the who, what, where, when and how much of backcountry recreation, it is difficult to effectively integrate visitors' needs, expectations and preferences into park management plans.

This questionnaire is part of a research project, being carried out at Memorial University of Newfoundland in co-operation with the Canadian Parks Service. The aim of the research is to develop a better understanding of the different visitor groups who choose Gros Morne's backcountry as their recreation setting.

You are one of a select group who is being requested to give your opinions, insights and experiences about backcountry recreation in Gros Morne National Park. In order that the results will truly represent the thinking of park visitors, it is very important that each questionnaire be completed and returned as soon as possible.

The results of the research in the form of statistical tables will be made available to Environment Canada, Parks to aid them in park planning issues. All information on the questionnaire form will be used for the purpose of research and will be treated in accordance with the Access to Information and Privacy Act.

Thank you for your time and effort in completing the questionnaire and returning it in the postage-paid envelope provided. Wishing you the best in your future National Park experiences.

Sincerely,

Lisa Spillecy
Lisa Spillecy
Researcher

VISITOR STUDY: BACKCOUNTRY USE IN GROS MORNE NATIONAL PARK

This questionnaire is part of a study to determine levels of use, needs and expectations of the backcountry visitor. For the purpose of this questionnaire, backcountry is defined as any area which is primarily undeveloped or has limited primitive development (such as pit type toilets). Backcountry use refers to recreational activities which take place in backcountry areas.

Section 1 - BACKCOUNTRY ACTIVITY

This section asks questions about your general experience, involvement and investment in backcountry activities.

1. Is this your first overnight trip to any backcountry area?

☐ YES ☐ NO

If NO, how many other backcountry trips have you made in the past year? _____ TRIPS

2. How important is it for you to spend your outdoor recreation time in backcountry areas rather than other recreation settings? (Please check the statement which best applies to you)

☐ NOT AT ALL IMPORTANT ☐ VERY IMPORTANT
☐ SOMEWHAT IMPORTANT ☐ EXTREMELY IMPORTANT
☐ QUITE IMPORTANT

3. While you may participate in more than one activity, which of the following do you consider to be your PRIMARY form of backcountry recreation? (Please check ONLY ONE)

☐ HIKING
☐ CAMPING
☐ FISHING
☐ HUNTING
☐ BIRDWATCHING
☐ WILDLIFE VIEWING (OTHER THAN BIRDS)
☐ NATURE STUDY
☐ PHOTOGRAPHY
☐ SEA KAYAKING
☐ CANOEING
☐ ROCK CLIMBING
☐ WINTER CAMPING
☐ SNOWSHOEING
☐ SNOWMOBILING
☐ CROSS-COUNTRY SKIING
☐ OTHER (please specify) _____

4. How many years have you participated in your PRIMARY backcountry activity?
 _____ YEARS

33. What is your total family income per year? (Check the category in which your income fits)

☐ LESS THAN \$10,000 ☐ \$40,001 TO \$50,000
☐ \$10,001 TO \$20,000 ☐ \$50,001 TO \$60,000
☐ \$20,001 TO \$30,000 ☐ \$60,001 TO \$70,000
☐ \$30,001 TO \$40,000 ☐ OVER \$70,000

34. What is the highest level of formal education you have attained? (Check the category which best fits your answer)

☐ NO FORMAL EDUCATION ☐ SOME TECHNICAL OR VOCATIONAL
☐ SOME ELEMENTARY SCHOOL ☐ FINISHED VOCATIONAL TRAINING
☐ FINISHED ELEMENTARY SCHOOL ☐ SOME UNIVERSITY
☐ SOME HIGH SCHOOL ☐ FINISHED UNIVERSITY DEGREE
☐ FINISHED HIGH SCHOOL ☐ POST GRADUATE STUDY

35. Where is your permanent address?

CITY _____
 PROVINCE/STATE _____
 COUNTRY _____

THANK-YOU FOR YOUR CO-OPERATION IN COMPLETING THIS QUESTIONNAIRE

Please use this space and that on the following page to provide comments about changes you would like to see, problems you encountered, good experiences or any other additional comments regarding Gros Morne's backcountry.

26. Which information service locations within the park did you visit? (Please check all that apply)

☐ VISITOR RECEPTION CENTER
☐ COW HEAD WARDEN STATION
☐ ROCKY HARBOR WARDEN STATION
☐ BIRCHY HEAD WARDEN STATION
☐ ADMINISTRATION BUILDING
☐ LOBSTER COVE HEAD LIGHTHOUSE

27. How would you rate the quality of backcountry information services available within Gros Morne? (Please check the box which best represents your opinion)

	POOR	FAIR	GOOD	EXCELLENT
LOCATIONS OF INFORMATION SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONVENIENCE OF HOURS OF OPERATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TYPE OF INFORMATION PROVIDED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QUALITY OF INFORMATION PROVIDED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXPERTISE OF PERSONS PROVIDING SERVICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AVAILABILITY OF STAFF FOR REGISTRATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. Overall, how satisfying was your most recent stay in Gros Morne National Park? (Please check the statement which best applies)

☐ THE TRIP GREATLY EXCEEDED MY EXPECTATIONS
☐ THE TRIP EXCEEDED MY EXPECTATIONS
☐ THE TRIP MET MY EXPECTATIONS
☐ THE TRIP FELL BELOW MY EXPECTATIONS
☐ THE TRIP FELL GREATLY BELOW MY EXPECTATIONS

Please elaborate: _____

29. Do you plan on returning to Gros Morne for another backcountry trip?

☐ YES ☐ NO

Section 4- VISITOR PROFILE

The following questions allow comparison between backcountry visitors and the general public.

30. You are ☐ FEMALE ☐ MALE

31. Your present age is _____ years.

32. Your usual occupation is _____.

5. How many times have you participated in this PRIMARY activity over the past year? _____ TIMES

6. How would you rate your skill level for this PRIMARY activity? (Check the level which best describes you)

☐ NOVICE ☐ ADVANCED
☐ BEGINNER ☐ EXPERT
☐ INTERMEDIATE

7. How would you rate yourself as an outdoorsperson? (Please check one only)

☐ COMFORTABLE TAKING A ONE OR TWO HOUR STROLL ON A MARKED TRAIL
☐ COMFORTABLE ON A HALF-DAY HIKE ON A MARKED TRAIL
☐ COMFORTABLE ON A ONE DAY HIKE ON A MARKED TRAIL
☐ COMFORTABLE ON A WEEKEND BACKPACKING TRIP ON A MARKED TRAIL
☐ COMFORTABLE ON A ONE WEEK WILDERNESS TRIP
☐ COMFORTABLE LEADING A GROUP ON A ONE WEEK WILDERNESS TRIP

8. For each of the following, please read the statement and circle the letter(s) which best represent your level of agreement with that statement where:

SD = STRONGLY DISAGREE A = AGREE
 D = DISAGREE SA = STRONGLY AGREE
 N = NEUTRAL

My preferred outdoor recreation setting provides me with the opportunity to:

experience wilderness	SD	D	N	A	SA
explore new places	SD	D	N	A	SA
be away from crowds	SD	D	N	A	SA
develop my skills	SD	D	N	A	SA
learn more about nature	SD	D	N	A	SA
test and use my equipment	SD	D	N	A	SA
challenge myself	SD	D	N	A	SA
meet new people	SD	D	N	A	SA
help me keep in shape	SD	D	N	A	SA
relax	SD	D	N	A	SA

9. What is the approximate value of the equipment and clothing related to your PRIMARY activity (eg. hiking boots, binoculars, kayak....) that you own? (Please check one category)

☐ \$0 ☐ \$1001-\$2000
☐ \$1-\$200 ☐ \$2001-\$5000
☐ \$201-\$500 ☐ \$5001-\$10,000
☐ \$501-\$1000 ☐ MORE THAN \$10,000

10. Approximately how much have you spent on other expenditures related to this PRIMARY activity in the past year? eg. travel expenses, books...
(Check the category which best estimates your TOTAL PERSONAL expenditure)

<input type="checkbox"/> \$0	<input type="checkbox"/> \$1001-\$2000
<input type="checkbox"/> \$1-\$200	<input type="checkbox"/> \$2001-\$5000
<input type="checkbox"/> \$201-\$500	<input type="checkbox"/> \$5001-\$10,000
<input type="checkbox"/> \$501-\$1000	<input type="checkbox"/> MORE THAN \$10,000

11. Please list any clubs or associations related to this PRIMARY activity to which you currently belong. _____

12. Please list those newsletters and magazines related to your PRIMARY activity to which you currently subscribe. _____

13. Please list any formal training, courses or workshops associated with this PRIMARY activity in which you have participated in the last two years. _____

14. For each of the following, please read the statement and circle the letter(s) which best represent the level of importance which you assign to each type of area, where:

NI = NOT AT ALL IMPORTANT	VI = VERY IMPORTANT
SI = SOMEWHAT IMPORTANT	EI = EXTREMELY IMPORTANT
QI = QUITE IMPORTANT	

How important is it for you to spend time in:

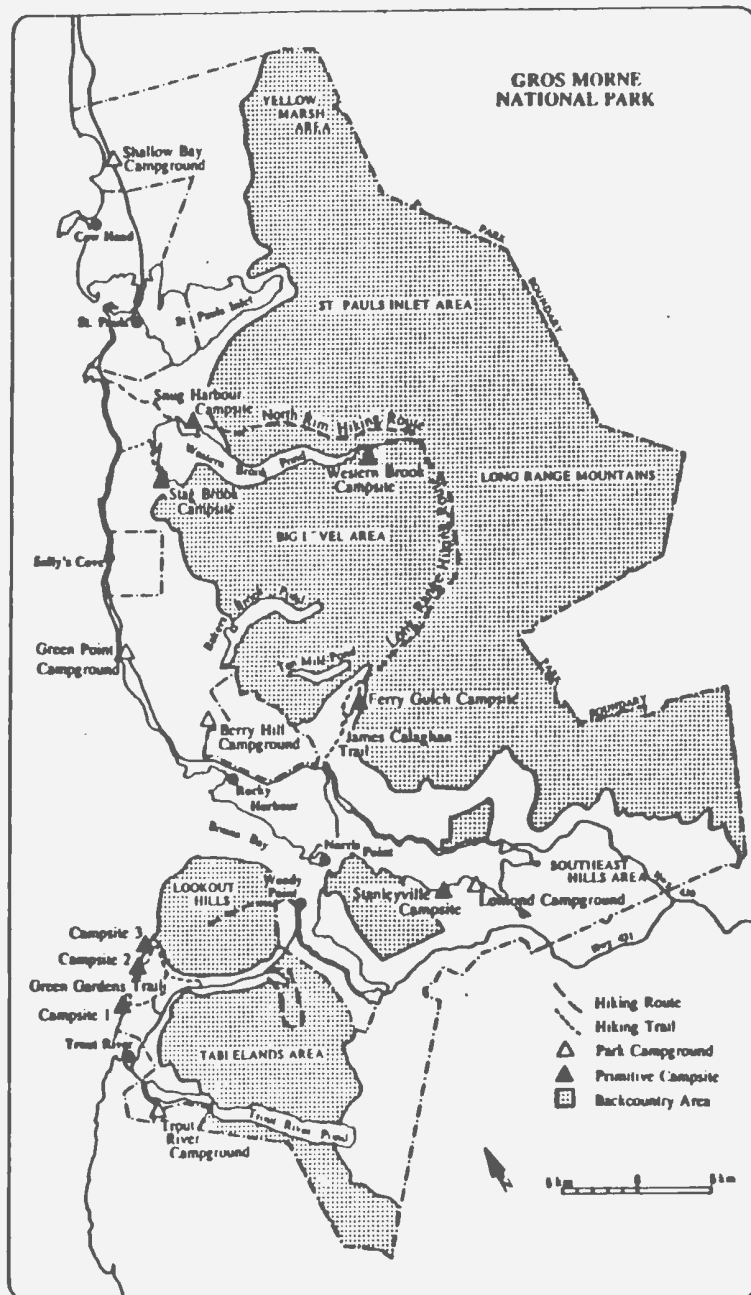
an area with challenging terrain	NI	SI	QI	VI	EI
an area where one can see wildlife	NI	SI	QI	VI	EI
an area with different types of vegetation	NI	SI	QI	VI	EI
an area with unusual local plants	NI	SI	QI	VI	EI
an area in which one can easily find drinkable water	NI	SI	QI	VI	EI
an area with scenic vistas	NI	SI	QI	VI	EI
an area which is home to large animals	NI	SI	QI	VI	EI

24. Using the accompanying map to aid you, please indicate at which sites and areas you visited and stayed overnight (Please check all which apply to your most recent trip)

	SITES/AREAS VISITED	NUMBER OF OVERNIGHTS
TROUT RIVER CAMPGROUND	<input type="checkbox"/>	___
WOODY POINT	<input type="checkbox"/>	___
LOMOND CAMPGROUND	<input type="checkbox"/>	___
NORRIS POINT	<input type="checkbox"/>	___
JAMES CALAGHAN TRAIL	<input type="checkbox"/>	___
ROCKY HARBOR	<input type="checkbox"/>	___
BERRY HILL CAMPGROUND	<input type="checkbox"/>	___
GREEN POINT CAMPGROUND	<input type="checkbox"/>	___
SALLY'S COVE	<input type="checkbox"/>	___
ST. PAULS	<input type="checkbox"/>	___
CON HEAD	<input type="checkbox"/>	___
SHALLOW BAY CAMPGROUND	<input type="checkbox"/>	___
GREEN GARDENS TRAIL CAMPSITE 1	<input type="checkbox"/>	___
GREEN GARDENS TRAIL CAMPSITE 2	<input type="checkbox"/>	___
GREEN GARDENS TRAIL CAMPSITE 3	<input type="checkbox"/>	___
LOOKOUT HILLS AREA	<input type="checkbox"/>	___
TABLELANDS AREA	<input type="checkbox"/>	___
TROUT RIVER POND AREA	<input type="checkbox"/>	___
WESTERN BROOK POND CAMPSITE	<input type="checkbox"/>	___
BIG LEVEL AREA	<input type="checkbox"/>	___
TEN MILE POND AREA	<input type="checkbox"/>	___
YELLOW MARSH AREA	<input type="checkbox"/>	___
SMUG HARBOR CAMPSITE	<input type="checkbox"/>	___
NORTH RIM HIKING ROUTE	<input type="checkbox"/>	___
LONG RANGE HIKING ROUTE	<input type="checkbox"/>	___
FERRY GULCH CAMPSITE	<input type="checkbox"/>	___
SOUTHEAST HILLS AREA	<input type="checkbox"/>	___
STAG BROOK CAMPSITE	<input type="checkbox"/>	___
BIG LEVEL AREA	<input type="checkbox"/>	___
ST. PAULS INLET AREA	<input type="checkbox"/>	___
STANLEYVILLE CAMPSITE	<input type="checkbox"/>	___
OTHER (please indicate on map)	<input type="checkbox"/>	___

25. When you were planning your trip (before you left home), what were your main sources of information? (Check all that apply)

☐ A PREVIOUS VISIT TO GROS MORNE
☐ FRIENDS OR RELATIVES WHO HAD VISITED GROS MORNE
☐ GROS MORNE RESPONSES TO YOUR ENQUIRY
☐ OTHER CANADIAN PARK SERVICE INFORMATION SOURCES
☐ CANADIAN GOVERNMENT OFFICE OF TOURISM
☐ NEWFOUNDLAND AND LABRADOR TOURIST INFORMATION
☐ MARINE ATLANTIC FERRIES
☐ SPECIAL INTEREST GROUP OR CLUB
☐ NEWSPAPER OR MAGAZINE ARTICLE (name: _____)
☐ OTHER (please specify: _____)



an area which contains unusual geological features	NI	SI	OI	VI	EI
an area in which one feels that help is not too far away if one needs it	NI	SI	OI	VI	EI
an area with national park status	NI	SI	OI	VI	EI
an area where one can see and smell the ocean	NI	SI	OI	VI	EI
an area with waters suitable for swimming	NI	SI	OI	VI	EI
an area with mountainous terrain	NI	SI	OI	VI	EI
an area with few signs of other people	NI	SI	OI	VI	EI
an area which is new or different	NI	SI	OI	VI	EI
an area which has snow	NI	SI	OI	VI	EI
an area where there is readily available firewood	NI	SI	OI	VI	EI

Section 2 - BACKCOUNTRY MANAGEMENT STRATEGIES

15. Following is a variety of options for managing backcountry areas. Please circle the letter(s) which best represent the degree to which you support or oppose each option as a management strategy for backcountry areas, where:

SO = STRONGLY OPPOSE
O = OPPOSE
N = NEUTRAL
S = SUPPORT
SS = STRONGLY SUPPORT

Imposing trail quotas for high use areas	SO	O	N	S	SS
Providing pit toilets at campsites	SO	O	N	S	SS
Requiring overnight backcountry permits	SO	O	N	S	SS
Revegetating overused areas	SO	O	N	S	SS
Installing accurate directional signs	SO	O	N	S	SS
Paving access roads	SO	O	N	S	SS
Establishing and maintaining trails	SO	O	N	S	SS
Not providing trails	SO	O	N	S	SS
Marking routes	SO	O	N	S	SS

Fining backcountry regulation violators	\$0	0	N	\$	\$S
Limiting party sizes to 10 persons or less	\$0	0	N	\$	\$S
Establishing user fees	\$0	0	N	\$	\$S
Providing information on the natural history of the area	\$0	0	N	\$	\$S
Providing guided expeditions	\$0	0	N	\$	\$S
Providing public access to the backcountry (e.g. cable car)	\$0	0	N	\$	\$S
Permitting horse use	\$0	0	N	\$	\$S
Providing more warden patrols to assist users and enforce regulations	\$0	0	N	\$	\$S
Restricting helicopter traffic during hiking season	\$0	0	N	\$	\$S
Restricting the number of parties in an area at any one time	\$0	0	N	\$	\$S
Providing more campsites	\$0	0	N	\$	\$S
Restricting campfires	\$0	0	N	\$	\$S
Providing primitive campsites with tent pads	\$0	0	N	\$	\$S
Providing Appalachian Mountain style shelters	\$0	0	N	\$	\$S

Section 3- BACKCOUNTRY ACTIVITY IN GROS MORNE

The following questions pertain to your activities in the backcountry of Gros Morne. The portions of Gros Morne which are considered to be backcountry areas include the undeveloped areas and the primitive campsites shown on the map on the next page.

16. How many trips (including your most recent) have you made to Gros Morne National Park? _____ TRIPS

17. How many of these trips (including your most recent) involved travel to the backcountry? _____ TRIPS

18. When was your most recent trip to Gros Morne's backcountry?

FROM _____ TO _____
(mm/dd/yy) (mm/dd/yy)

19. How long before your most recent backcountry trip to Gros Morne National Park did you decide to go? (Please check the category which best applies)

☐ LESS THAN 24 HOURS ☐ 1 MONTH TO 6 MONTHS
☐ 1 DAY TO 1 WEEK ☐ 6 MONTHS TO 12 MONTHS
☐ 1 WEEK TO 1 MONTH ☐ MORE THAN 1 YEAR

20. Was Gros Morne: (Please check the one which best applies)

☐ THE MAIN DESTINATION OF YOUR TRIP FROM HOME?
☐ ONE OF SEVERAL MAJOR STOPS PLANNED FOR YOUR TRIP?
☐ AN UNPLANNED STOP

21. What type of group were you with during your most recent backcountry trip to Gros Morne (Please check all that apply)

☐ ALONE
☐ COUPLE
☐ FAMILY
☐ GROUP OF FRIENDS OR ACQUAINTANCES
☐ COMMERCIAL GROUP (name: _____)
☐ CLUB (name: _____)
☐ OTHER (Please specify) _____

22. How many (including yourself) in the group? _____ PERSONS

23. Which activities did you participate in while visiting Gros Morne's backcountry? (Please check as many as apply)

☐ HIKING
☐ CAMPING
☐ FISHING
☐ BIRDMATCHING
☐ WILDLIFE VIEWING (other than birds)
☐ NATURE STUDY
☐ PHOTOGRAPHY
☐ SEA KAYAKING
☐ CANOEING
☐ ROCK CLIMBING
☐ OTHERS (Please specify) _____



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ENQUÊTE AUPRÈS DES VISITEURS : UTILISATION DES ZONES SAUVAGES DANS LE PARC NATIONAL DU GROS-MORNE

Aux visiteurs des zones sauvages,

La plupart de ceux qui se rendent dans les parcs nationaux du Canada prennent à coeur la gestion de ces parcs. Malheureusement, les aménagistes et les administrateurs responsables de la gestion des parcs en connaissent très peu sur les visiteurs des zones sauvages. Sans information détaillée sur les loisirs en zones sauvages (qui s'y adonne et avec quelle fréquence, où et quand), les responsables des parcs ne peuvent dresser leurs plans de gestion en conséquence.

Le présent questionnaire s'inscrit dans un travail de recherche entrepris par l'université Memorial de Terre-Neuve en collaboration avec le Service canadien des parcs. Le but du questionnaire est de mieux connaître les divers groupes de visiteurs qui optent pour les zones sauvages du parc national du Gros-Morne.

En tant que membre d'un groupe choisi, vous êtes invité à nous faire part de vos points de vue et de vos expériences relativement aux loisirs en zones sauvages au parc national du Gros-Morne. Il est très important que les questionnaires soient remplis et retournés le plus vite possible afin que nous puissions en tenir compte.

Les résultats de cette recherche seront présentés au Service canadien des parcs sous forme de tableaux statistiques afin de l'aider à prendre des décisions liées à la planification. Toute l'information contenue dans le questionnaire servira à la recherche et elle sera traitée conformément aux dispositions des lois sur l'accès à l'information et sur la protection des renseignements personnels.

Nous vous remercions de votre collaboration et vous demandons de nous retourner le questionnaire dans l'enveloppe pré-affranchie ci-jointe. Nous espérons que vos futures visites des parcs nationaux seront très enrichissantes.

Nous vous prions d'agréer l'expression de nos sentiments les meilleurs.

Lise Spellacy
Chercheuse

Traduit par: Secrétariat d'état du Canada
Bureau de traduction

DOE/CPS-015-04098

ENQUÊTE AUPRÈS DES VISITEURS : UTILISATION DES ZONES SAUVAGES DANS LE PARC NATIONAL DU GROS-MORNE

Le présent questionnaire fait partie d'une enquête visant à déterminer les niveaux d'utilisation ainsi que les besoins et les attentes du visiteur des zones sauvages. Aux fins du présent questionnaire, zone sauvage désigne toute région qui est principalement non exploitée ou dont l'aménagement de services publics est limité (ex.: toilettes avec fosses). L'utilisation des zones sauvages désigne les loisirs auxquels s'adonnent les visiteurs des zones sauvages.

Première partie - LOISIRS EN ZONES SAUVAGES

Cette partie comporte des questions au sujet des loisirs auxquels vous vous adonnez en zones sauvages et des expériences que vous avez vécues dans ces zones.

1. Est-ce votre première excursion dans une zone sauvage?

☐ OUI ☐ NON

Si NON, combien d'autres excursions en zones sauvages avez-vous effectuées au cours de la dernière année?
_____ EXCURSIONS

2. Quelle importance attachez-vous à un séjour récréatif en zones sauvages par rapport à d'autres activités récréative? (Choisir l'énoncé qui convient le mieux)

☐ PAS DU TOUT IMPORTANT
☐ PLUS OU MOINS IMPORTANT
☐ ASSEZ IMPORTANT
☐ TRÈS IMPORTANT
☐ EXTRÊMEMENT IMPORTANT

3. Lequel parmi les loisirs suivants constitue votre PRINCIPALE forme de loisir en zones sauvages? (Choisir une réponse)

☐ RANDONNÉE PÉDESTRE
☐ CAMPING
☐ PÊCHE
☐ CHASSE
☐ OBSERVATION D'OISEAUX
☐ OBSERVATION DE LA FAUNE (AUTRE QUE LES OISEAUX)
☐ OBSERVATION DE LA NATURE
☐ PHOTOGRAPHIE
☐ KAYAC EN MER
☐ CANOTAGE
☐ ESCALADE DE ROCHE
☐ CAMPING D'HIVER
☐ RAQUETTE
☐ MOTONEIGE
☐ SKI DE FOND
☐ AUTRE (préciser) _____

4. Vous vous adonnez à votre PRINCIPAL loisir en zones sauvages depuis combien d'années? _____ ANNÉES

5. Au cours de la dernière année, combien de fois vous êtes-vous adonné à ce loisir PRINCIPAL? _____ FOIS.

33. Votre revenu familial annuel correspond à quelle catégorie? (Choisir la réponse qui correspond à votre revenu)

<input type="checkbox"/> MOINS DE 10 000 \$	<input type="checkbox"/> 40 001 \$ À 50 000 \$
<input type="checkbox"/> 10 001 \$ À 20 000 \$	<input type="checkbox"/> 50 001 \$ À 60 000 \$
<input type="checkbox"/> 20 001 \$ À 30 000 \$	<input type="checkbox"/> 60 001 \$ À 70 000 \$
<input type="checkbox"/> 30 001 \$ À 40 000 \$	<input type="checkbox"/> PLUS DE 70 000 \$

34. Quel niveau d'études avez-vous atteint? (Choisir la réponse qui convient le mieux à votre situation)

☐ PAS D'ÉTUDES STRUCTURÉES
☐ CERTAINES ÉTUDES ÉLÉMENTAIRES
☐ TERMINÉ ÉTUDES ÉLÉMENTAIRES
☐ CERTAINES ÉTUDES SECONDAIRES
☐ TERMINÉ ÉTUDES SECONDAIRES
☐ CERTAINES ÉTUDES TECHNIQUES OU PROFESSIONNELLES
☐ TERMINÉ ÉTUDES PROFESSIONNELLES
☐ CERTAINES ÉTUDES UNIVERSITAIRES
☐ OBTENU DIPLÔME UNIVERSITAIRE
☐ ÉTUDES GRADUÉES

35. Où se trouve votre résidence permanente?

VILLE _____
PROVINCE OU ÉTAT _____
PAYS _____

NOUS VOUS REMERCIONS DE VOTRE COLLABORATION.

Veuillez utiliser l'espace ci-dessous et la page suivante pour nous faire connaître les modifications que vous aimeriez voir apportées au parc. Nous aimerions aussi connaître les difficultés qui sont survenues durant votre voyage et les belles expériences que vous avez vécues. N'hésitez pas non plus à nous faire part de tout autres commentaires au sujet des zones sauvages du Gros-Morne.

26. Quels centres d'information avez-vous visités dans le parc? (Choisir toutes les réponses qui conviennent)

- ☐ CENTRE D'ACCUEIL DES VISITEURS
☐ POSTE DE GARDIENS DE COM HEAD
☐ POSTE DE GARDIENS DE ROCKY HARBOUR
☐ POSTE DE GARDIENS DE POINTE BIRCHY
☐ ÉDIFICE ADMINISTRATIF DU PARC
☐ PHARE LOBSTER COVE HEAD

27. Quelle cote attribueriez-vous à la qualité des services d'information disponibles au parc du Gros-Morne au sujet des zones sauvages? (Choisir la réponse qui exprime le mieux votre opinion)

	MÉDIocre	ACCEPTABLE	BON	EXCELLENT
EMPLACEMENT DES SERVICES D'INFORMATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HEURES D'OUVERTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TYPE D'INFORMATION FOURNIE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QUALITÉ DE L'INFORMATION FOURNIE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMPÉTENCES DES PRÉPOSÉS FOURNISSANT LES SERVICES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DISPONIBILITÉ DU PERSONNEL POUR L'INSCRIPTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. De façon générale, comment qualifieriez-vous votre récent séjour au parc national du Gros-Morne? (Choisir l'énoncé qui s'applique le mieux à votre situation)

- ☐ LE VOYAGE A GRANDEMENT DÉPASSÉ MES ATTENTES
☐ LE VOYAGE A DÉPASSÉ MES ATTENTES
☐ LE VOYAGE A RÉPONDU À MES ATTENTES
☐ LE VOYAGE N'A PAS RÉPONDU À MES ATTENTES
☐ LE VOYAGE N'A PAS DU TOUT RÉPONDU À MES ATTENTES

Prière de fournir des détails : _____

29. Comptez-vous visiter Gros-Morne de nouveau pour une autre excursion en zones sauvages?

- ☐ OUI ☐ NON

Quatrième partie - PROFIL DU VISITEUR

Les questions suivantes visent à comparer les visiteurs des zones sauvages avec les membres du grand public.

30. Sexe du répondant ☐ FEMME ☐ HOMME

31. Vous êtes âgé de _____ ans.

32. Votre principale profession est _____.

6. Vous vous adonnez à ce loisir PRINCIPAL avec quel degré d'aisance? (Choisir le niveau qui décrit le mieux votre habileté)

- ☐ NOVICE ☐ AVANCÉ
☐ DÉBUTANT ☐ EXPERT
☐ INTERMÉDIAIRE

7. Comment vous décrivez-vous en tant qu'amateur de plein air? (Choisir une seule réponse)

- ☐ J'AIME ALLER FAIRE UNE BALLADE D'UNE HEURE OU DEUX DANS UN SENTIER BALISÉ
☐ J'AIME FAIRE UNE RANDONNÉE PÉDESTRE D'UNE DEMI-JOURNÉE DANS UN SENTIER BALISÉ
☐ J'AIME FAIRE UNE RANDONNÉE PÉDESTRE D'UNE JOURNÉE DANS UN SENTIER BALISÉ
☐ J'AIME FAIRE UNE RANDONNÉE D'UNE FIN DE SEMAINE DANS UN SENTIER BALISÉ
☐ J'AIME ENTREPRENDRE UNE RANDONNÉE DE NATURE SAUVAGE D'UNE SEMAINE
☐ J'AIME ÊTRE À LA TÊTE D'UN GROUPE POUR UNE RANDONNÉE DE NATURE SAUVAGE D'UNE SEMAINE

8. Pour chacun des énoncés, encercler la réponse qui traduit le mieux vos intérêts en tenant compte des abréviations correspondantes:

POTD = PAS DU TOUT D'ACCORD D = D'ACCORD
 PD = PAS D'ACCORD TAFD = TOUT À FAIT D'ACCORD
 I = INDIFFÉRENT

Mon milieu récréatif préféré en plein air est celui qui me permet de :

me familiariser avec la nature sauvage	POTD	PD	I	D	TAFD
explorer de nouveaux lieux	POTD	PD	I	D	TAFD
m'éloigner du monde	POTD	PD	I	D	TAFD
développer mes habiletés	POTD	PD	I	D	TAFD
approfondir mes connaissances de la nature	POTD	PD	I	D	TAFD
essayer et utiliser mon équipement	POTD	PD	I	D	TAFD
relever des défis	POTD	PD	I	D	TAFD
rencontrer des gens	POTD	PD	I	D	TAFD
me tenir en forme	POTD	PD	I	D	TAFD
me détendre	POTD	PD	I	D	TAFD

9. Quelle est la valeur approximative de l'équipement et des pièces d'habillement que vous utilisez pour exercer votre loisir PRINCIPAL (sélectionné à la question 3) (par exemple, bottes de randonnée, jumelles, kayak...)? (Choisir une réponse)

- ☐ 0 \$ ☐ 1 001 \$ à 2 000 \$
☐ 1 \$ à 200 \$ ☐ 2 001 \$ à 5 000 \$
☐ 201 \$ à 500 \$ ☐ 5 001 \$ à 10 000 \$
☐ 501 \$ à 1 000 \$ ☐ PLUS DE 10 000 \$

10. Quelles autres dépenses avez-vous engagées au cours de l'année pour vous adonner à votre loisir PRINCIPAL? (Par exemple, frais de déplacement, livres...) (Choisir la réponse qui correspond le mieux à VOS DÉPENSES PERSONNELLES TOTALES)

<input type="checkbox"/> 0 \$	<input type="checkbox"/> 1 001 \$ à 2 000 \$
<input type="checkbox"/> 1 \$ à 200 \$	<input type="checkbox"/> 2 001 \$ à 5 000 \$
<input type="checkbox"/> 201 \$ à 500 \$	<input type="checkbox"/> 5 001 \$ à 10 000 \$
<input type="checkbox"/> 501 \$ à 1 000 \$	<input type="checkbox"/> PLUS DE 10 000 \$

11. Veuillez énumérer les clubs ou les associations liés à ce loisir PRINCIPAL auxquels vous adhérez. _____

12. Veuillez énumérer les bulletins ou les revues liés à ce loisir PRINCIPAL auxquels vous êtes abonné. _____

13. Veuillez énumérer tout atelier, cours ou formation structuré ayant trait à ce loisir PRINCIPAL et auquel vous avez participé au cours des deux dernières années. _____

14. Pour chacun des énoncés, encerclez la réponse qui correspond le mieux à l'importance que vous accordez à chaque type de région, en tenant compte des abréviations suivantes:

PDI = PAS DU TOUT IMPORTANT	TI = TRÈS IMPORTANT
POMI = PLUS OU MOINS IMPORTANT	EI = EXTRÊMEMENT IMPORTANT
AI = ASSEZ IMPORTANT	

À quel point est-il important pour vous d'aller dans une région :

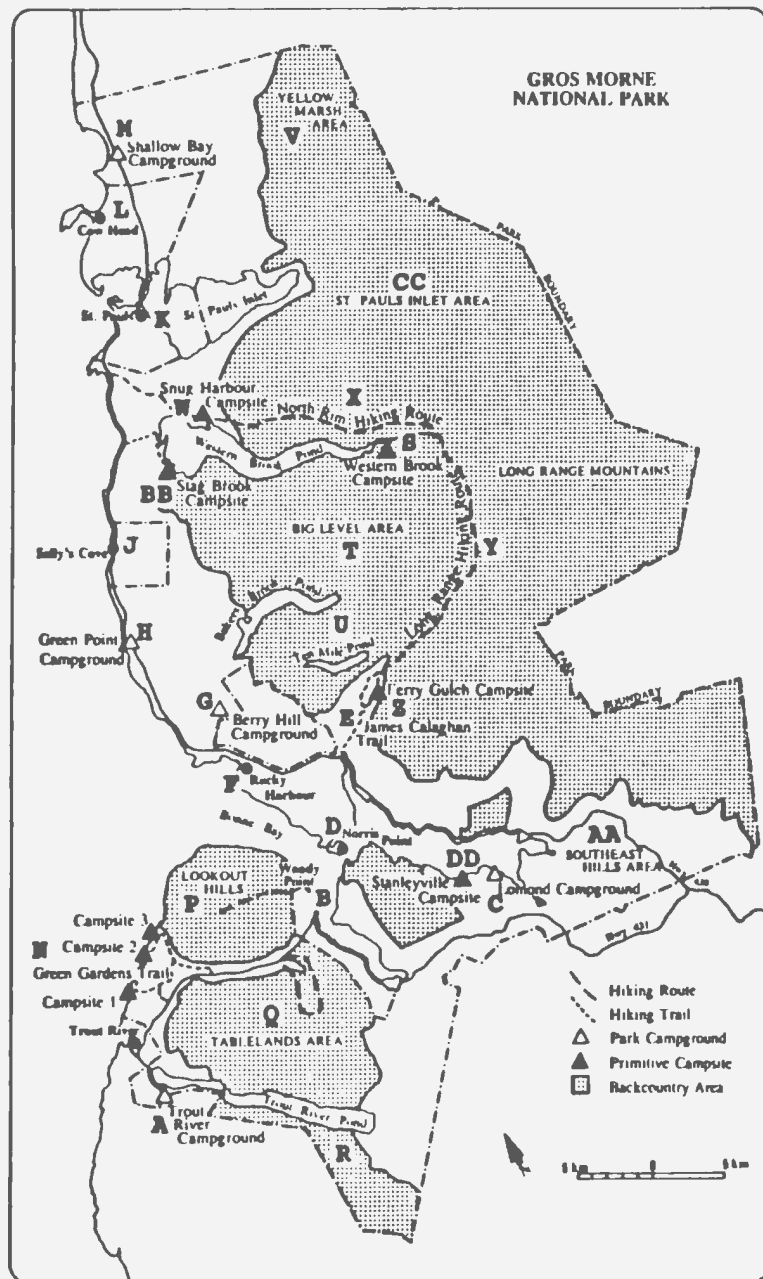
dotée d'un terrain qui exige des efforts physiques	PDI	POMI	AI	TI	EI
où vous pouvez observer la faune	PDI	POMI	AI	TI	EI
dotée de divers types de végétation	PDI	POMI	AI	TI	EI
dotée de plantes locales inhabituelles	PDI	POMI	AI	TI	EI
où il y a de l'eau potable	PDI	POMI	AI	TI	EI
où vous pouvez observer des vues panoramiques	PDI	POMI	AI	TI	EI
où habitent de gros animaux	PDI	POMI	AI	TI	EI
présentant des caractéristiques géologiques particulières	PDI	POMI	AI	TI	EI

24. À l'aide de la carte ci-contre, indiquez quels emplacements et quelles zones vous avez visités et où vous avez passé la nuit (Choisir toutes les réponses qui s'appliquent à votre plus récent voyage)

	EMPLACEMENTS ET ZONES VISITÉS	NOMBRE DE NUITS
A. TERRAIN DE CAMPING DE LA RIVIÈRE TROUT	<input type="checkbox"/>	---
B. WOODY POINT	<input type="checkbox"/>	---
C. TERRAIN DE CAMPING LONOND	<input type="checkbox"/>	---
D. MORRIS POINT	<input type="checkbox"/>	---
E. SENTIER JAMES CALAGHAN	<input type="checkbox"/>	---
F. ROCKY HARBOUR	<input type="checkbox"/>	---
G. TERRAIN DE CAMPING COLLINE BERRY	<input type="checkbox"/>	---
H. TERRAIN DE CAMPING POINTE GREEN	<input type="checkbox"/>	---
J. SALLY'S COVE	<input type="checkbox"/>	---
K. ST. PAUL'S	<input type="checkbox"/>	---
L. COW HEAD	<input type="checkbox"/>	---
M. TERRAIN DE CAMPING BAIE SHALLOW	<input type="checkbox"/>	---
N. SENTIER GREEN GARDENS (1)	<input type="checkbox"/>	---
N. SENTIER GREEN GARDENS (2)	<input type="checkbox"/>	---
N. SENTIER GREEN GARDENS (3)	<input type="checkbox"/>	---
P. RÉGION DES COLLINES LOOKOUT	<input type="checkbox"/>	---
Q. RÉGION DE TABLELANDS	<input type="checkbox"/>	---
R. RÉGION DE L'ÉTANG TROUT RIVER	<input type="checkbox"/>	---
S. EMPLACEMENT DE CAMPING DE L'ÉTANG WESTERN BROOK	<input type="checkbox"/>	---
T. RÉGION DE BIG LEVEL	<input type="checkbox"/>	---
U. RÉGION DE L'ÉTANG TEN MILE POND	<input type="checkbox"/>	---
V. RÉGION YELLOW MARSH	<input type="checkbox"/>	---
W. EMPLACEMENT DE CAMPING SMUG HARBOUR	<input type="checkbox"/>	---
X. PISTE DE RANDONNÉE PÉDESTRE NORTH RIM	<input type="checkbox"/>	---
Y. PISTE DE RANDONNÉE PÉDESTRE LONG RANGE	<input type="checkbox"/>	---
Z. EMPLACEMENT DE CAMPING FERRY GLACH	<input type="checkbox"/>	---
AA. RÉGION DES COLLINES SOUTHEAST	<input type="checkbox"/>	---
BB. EMPLACEMENT DE CAMPING RUISSEAU STAG	<input type="checkbox"/>	---
CC. RÉGION DE L'ANSE ST. PAUL'S	<input type="checkbox"/>	---
DD. EMPLACEMENT DE CAMPING STANLEYVILLE	<input type="checkbox"/>	---
AUTRE (indiquer sur la carte)	<input type="checkbox"/>	---

25. Quelles principales sources d'information avez-vous utilisées pour organiser votre voyage (avant d'aller en voyage)? (Choisir toutes les réponses qui conviennent)

<input type="checkbox"/>	VISITE ANTÉRIEURE AU GROS-MORNE
<input type="checkbox"/>	AMIS OU PARENTS QUI AVAIENT DÉJÀ VISITÉ GROS-MORNE
<input type="checkbox"/>	RENSEIGNEMENTS FOURNIS PAR LE PERSONNEL DU PARC
<input type="checkbox"/>	AUTRES SOURCES D'INFORMATION DU SERVICE CANADIEN DES PARCS
<input type="checkbox"/>	CENTRE TOURISTIQUE DU GOUVERNEMENT CANADIEN
<input type="checkbox"/>	INFORMATION TOURISTIQUE DE TERRE-NEUVE ET DU LABRADOR
<input type="checkbox"/>	SERVICES DE TRAVERSERS DE MARINE ATLANTIQUE
<input type="checkbox"/>	GROUPE D'INTÉRÊT OU CLUB SPÉCIAL
<input type="checkbox"/>	ARTICLE DE JOURNAL OU DE REVUE (nom : _____)
<input type="checkbox"/>	AUTRE (préciser) : _____



où l'on peut obtenir de l'aide facilement au besoin	PDTI	POMI	AI	TI	EI
qui fait partie du réseau des parcs nationaux	PDTI	POMI	AI	TI	EI
où l'on peut voir et sentir la mer	PDTI	POMI	AI	TI	EI
dotée de cours d'eau dans lesquels on peut se baigner	PDTI	POMI	AI	TI	EI
dotée d'un terrain montagneux	PDTI	POMI	AI	TI	EI
où les traces de la civilisation sont quasi inexistantes	PDTI	POMI	AI	TI	EI
nouvelle ou différente	PDTI	POMI	AI	TI	EI
où il y a de la neige	PDTI	POMI	AI	TI	EI
où on peut se procurer du bois de feu	PDTI	POMI	AI	TI	EI

Deuxième partie - STRATÉGIES D'AMÉNAGEMENT DES ZONES SAUVAGES

15. On vous propose ici diverses options pour l'aménagement des zones sauvages. Choisir la réponse qui correspond le mieux au degré de soutien que vous accordez à chaque option en tant que stratégie d'aménagement des zones sauvages. Tenez compte des abréviations suivantes:

POTD = PAS DU TOUT D'ACCORD
PD = PAS D'ACCORD
I = INDIFFÉRENT

D = D'ACCORD
TAFD = TOUT À FAIT D'ACCORD

Imposer une limite quant au nombre de sentiers dans les régions à utilisation élevée

POTD PD I D TAFD

Fournir des toilettes avec fosses dans les emplacements de camping

POTD PD I D TAFD

Exiger des permis pour les excursions comportant une étape de nuit en zone sauvage

POTD PD I D TAFD

Restaurer la végétation des zones fortement fréquentées

POTD PD I D TAFD

Installer des panneaux de direction convenables

POTD PD I D TAFD

Asphalter les routes d'accès

POTD PD I D TAFD

Aménager et entretenir les sentiers

POTD PD I D TAFD

Ne pas aménager de sentiers

POTD PD I D TAFD

Baliser les routes

POTD PD I D TAFD

Condamner à une amende les personnes qui enfreignent les règlements en matière de zones sauvages	POTD	PD	1	D	TAFD
Limiter les groupes à 10 personnes ou moins	POTD	PD	1	D	TAFD
Exiger des frais d'utilisation	POTD	PD	1	D	TAFD
Fournir des renseignements sur l'histoire naturelle de la région	POTD	PD	1	D	TAFD
Offrir des excursions guidées	POTD	PD	1	D	TAFD
Fournir un accès public aux zones sauvages (par exemple, véhicule tracté par câble)	POTD	PD	1	D	TAFD
Permettre l'utilisation de chevaux	POTD	PD	1	D	TAFD
Assurer plus de surveillance par les gardiens afin d'aider les utilisateurs et d'assurer le respect des règlements	POTD	PD	1	D	TAFD
Limiter les vols par hélicoptère pendant la saison des randonnées pédestres	POTD	PD	1	D	TAFD
Limiter le nombre de groupes ayant simultanément accès à une région	POTD	PD	1	D	TAFD
Offrir plus d'emplacements de camping	POTD	PD	1	D	TAFD
Limiter les feux de camp	POTD	PD	1	D	TAFD
Fournir des emplacements de camping sauvages avec des aires pour les tentes	POTD	PD	1	D	TAFD
Fournir des abris de modèle Appalachian Mountains	POTD	PD	1	D	TAFD

Troisième partie - ACTIVITÉS EN ZONES SAUVAGES DANS LE PARC NATIONAL DU GROS-MORNE

Les questions suivantes portent sur les activités auxquelles vous vous adonnez en zones sauvages dans le parc national du Gros-Morne. Les zones sauvages comprennent des régions non exploitées et des emplacements de camping sauvages (indiqués sur la carte à la page suivante).

16. Combien d'excursions (y compris la plus récente) avez-vous effectuées au parc national du Gros-Morne? _____ EXCURSIONS
17. Combien de ces excursions (y compris la plus récente) ont été faites en zones sauvages? _____ EXCURSIONS

18. Quand avez-vous effectué votre plus récente excursion en zones sauvages au parc national du Gros-Morne?
- DU _____ AU _____
(mm/jj/aa) (mm/jj/aa)
19. Combien de temps avant votre plus récente excursion dans les zones sauvages du Gros-Morne aviez-vous décidé de l'entreprendre? (Choisir la réponse qui décrit le mieux votre situation)
- ☐ MOINS DE VINGT-QUATRE HEURES ☐ 1 À 6 MOIS
☐ 1 JOUR À 1 SEMAINE ☐ 6 À 12 MOIS
☐ 1 SEMAINE À 1 MOIS ☐ PLUS D'UN AN
20. Le parc Gros-Morne (Choisir la réponse qui décrit le mieux votre visite au parc)
- ☐ ÉTAIT LA PRINCIPALE DESTINATION DURANT MON VOYAGE?
☐ ÉTAIT UN ARRÊT PRÉVU DURANT MON VOYAGE
☐ ÉTAIT UN ARRÊT NON PRÉVU DURANT MON VOYAGE
21. Lequel des énoncés suivants décrit le mieux votre situation lors de votre plus récente excursion en zones sauvages dans le parc national du Gros-Morne? (Choisir toutes les réponses qui conviennent)
- ☐ SEUL
☐ COUPLE
☐ FAMILLE
☐ GROUPE D'AMIS OU DE CONNAISSANCES
☐ GROUPE ORGANISÉ (nom : _____)
☐ CLUB (nom : _____)
☐ AUTRE (Préciser) _____
22. De combien de personnes, incluant vous-même, se compose votre groupe? _____ PERSONNES
23. À quelles activités vous êtes-vous adonné durant votre visite en zones sauvages du Gros-Morne? (Choisir toutes les réponses qui conviennent)
- ☐ RANDONNÉE PÉDESTRE
☐ CAMPING
☐ PÊCHE
☐ CHASSE
☐ OBSERVATION D'OISEAUX
☐ OBSERVATION DE LA FAUNE (autre que les oiseaux)
☐ OBSERVATION DE LA NATURE
☐ PHOTOGRAPHIE
☐ KAYAC EN MER
☐ CANOTAGE
☐ ESCALADE DE ROCHE
☐ AUTRE (préciser) _____

Appendix B

CONSENT FORM



Environment
Canada

Environnement
Canada

Parks

Parcs

**GROS MORNE NATIONAL PARK
BACKCOUNTRY MAILING LIST PERMISSION FORM**

Dear Backcountry User:

Gros Morne National Park is compiling a mailing list of backcountry users. This list will be used to mail out questionnaires. We wish to determine backcountry users' characteristics and recreational preferences. This information is essential if we are to manage the backcountry in the best interests of everyone.

Of course, your participation is voluntary. However, we would like to assure you that any information we collect will be treated in accordance with the Access to Information and Privacy acts. No personal information will be linked to any individual, nor will the mailing list be used for any other purpose. The questionnaire will be brief and will come with a postage-paid return envelope.

It is important that all members of your party 16 years of age and over complete a separate form. If you would like to participate in this study, please complete the following information:

NAME: _____

STREET ADDRESS: _____

CITY/TOWN: _____

PROVINCE/STATE: _____ COUNTRY: _____

POSTAL/ZIP CODE: _____

Please indicate your preferred language for the questionnaire:

ENGLISH _____ FRENCH _____

Thank you for your cooperation.

Acting Superintendent,
Gros Morne National Park

Canada



Environnement
Canada
Parcs

Environnement
Canada
Parcs

PARC NATIONAL DU GROS-MORNE
FORMULAIRE D'AUTORISATION POUR UNE ENQUÊTE SUR LES USAGERS DES ZONES SAUVAGES

Monsieur (Madame),

Nous dressons actuellement une liste des usagers des zones sauvages. Elle sera utilisée pour envoyer par la poste des questionnaires sur les caractéristiques de ces campeurs et les loisirs qu'ils recherchent. Cette information nous est essentielle pour gérer les zones sauvages au mieux des intérêts de tout le monde.

Votre participation est tout à fait volontaire. Toutefois, nous tenons à vous assurer que tout renseignement que vous nous donnez sera traité conformément aux Lois sur l'accès à l'information et sur la protection des renseignements personnels. Aucune information personnelle ne sera reliée à quiconque et la liste de distribution ne sera pas utilisée à d'autres fins. Le questionnaire sera court et il sera accompagné d'une enveloppe-réponse affranchie.

Il est important que tous les membres de votre groupe âgés d'au moins 16 ans remplissent une formule. Si vous voulez participer à cette étude, vous êtes priés de fournir les renseignements suivants:

NOM: _____

ADRESSE: _____

VILLE: _____

PROVINCE/ÉTAT: _____ PAYS: _____

CODE POSTAL/ZIP CODE: _____

Prière d'indiquer en quelle langue vous voulez le questionnaire:

ANGLAIS _____ FRANÇAIS _____

Nous vous remercions de votre coopération.

James J. Smith A/super.

Le surintendant par intérim,
Parc national du Gros-Morne

Canada



Environnement
Canada

Environnement
Canada

Canadian Parks
Service

Service canadien
des parcs

**PARC NATIONAL DU GROS-MORNE
FORMULAIRE D'AUTORISATION POUR UNE ENQUÊTE**

Cher Campeur,

Nous dressons actuellement une liste des campeurs. Elle sera utilisée pour envoyer par la poste des questionnaires sur les caractéristiques de ces campeurs et les loisirs qu'ils recherchent. Cette information nous est essentielle pour gérer les parc au mieux des intérêts de tout le monde.

Votre participation est tout à fait volontaire. Toutefois, nous tenons à vous assurer que tout renseignement que vous nous donnez sera traité conformément aux Lois sur l'accès à l'information et sur la protection des renseignements personnels. Aucune information personnelle ne sera reliée à quiconque et la liste de distribution ne sera pas utilisée à d'autres fins. Le questionnaire sera court et il sera accompagné d'une enveloppe-réponse affranchie.

Il est important que tous les membres de votre groupe âgés d'au moins 16 ans remplissent une formule. Si vous voulez participer à cette étude, vous êtes priés de fournir les renseignements suivants:

NOM: _____

ADRESSE: _____

VILLE: _____

PROVINCE/ÉTAT: _____ PAYS: _____

CODE POSTAL/ZIP CODE: _____

Prière d'indiquer en quelle langue vous voulez le questionnaire:

Anglais _____ Français _____

Nous Vous remercions de votre coopération.

Le surintendant par intérim,
Parc national du Gros-Morne

Canada



Environnement
Canada

Environnement
Canada

Canadian Parks
Service

Service canadien
des parcs

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Il est important que tous les membres de votre groupe âgés d'au moins 16 ans remplissent une formule. Si vous voulez participer à cette étude, vous êtes priés de fournir les renseignements suivants:

NOM: _____

ADRESSE: _____

VILLE: _____

PROVINCE/ÉTAT: _____ PAYS: _____

CODE POSTAL/ZIP CODE: _____

Prière d'indiquer en quelle langue vous voulez le questionnaire:

Anglais _____ Français _____

Nous Vous remercions de votre coopération.

Le surintendant par intérim,
Parc national du Gros-Morne

Canada

Appendix C

FOLLOWUP POSTCARD



Cher visiteur du parc Gros Morne,

Récemment, vous avez reçu un questionnaire s'adressant aux visiteurs qui fréquentent les zones sauvages du parc national Gros Morne. Si vous avez complété et retourné ce questionnaire, nous apprécions l'attention que vous avez portée à l'enquête. Si non, nous vous serions gré d'y répondre et de nous le retourner rapidement. Le nombre d'utilisateurs des zones sauvages du Parc est relativement restreint, leurs intérêts sont néanmoins importants. L'étude que nous poursuivons a pour but de mieux connaître et servir les utilisateurs des zones sauvages. Afin de tenir compte de vos préoccupations, il serait important qu'elles se retrouvent au sein des réponses que nous recueillons.

Si vous faisiez parti d'un groupe lors de votre visite au parc national Gros Morne et que vous n'avez pas reçu le questionnaire, il nous fera plaisir de vous en faire parvenir un exemplaire. A cette fin, veuillez en faire la demande en téléphonant (709-737 4171) ou en complétant la section inférieure de cette carte. Nous vous remercions de votre coopération.

Bien à vous.

Lisa Spellacy
Lisa Spellacy

DÉTACHEZ ET RETOURNEZ LA SECTION DU BAS POUR RECEVOIR LE QUESTIONNAIRE

Veuillez, s'il vous plaît, me faire parvenir _____ questionnaire(s).

Nom: _____

Adresse complète: _____

Code postal: _____

Je désire un questionnaire rédigé en:

_____ anglais
_____ français

Retournez à:

Lisa Spellacy
Dept. of Geography
Memorial University of Newfoundland
St. John's, NFLD.
A1B 3X9



Dear Gros Morne Visitor,

You were recently mailed a questionnaire designed for backcountry visitors to Gros Morne National Park. If you have completed and returned the questionnaire, thank-you for your prompt response, if not, please complete and return the questionnaire today. Backcountry users are a small but important group of visitors to the park. If the results of this study are to accurately represent the opinions of visitors to the backcountry, it is extremely important that your response be included.

If you or a member of the party you were travelling with did not receive a questionnaire, please call (709-737-7417) or write now and another will be sent immediately. Thank-you again for your cooperation.

Sincerely,

Lisa Spellacy

Lisa Spellacy Dept. of Geography
Researcher Memorial University of Nfld.

PLEASE DETACH AND RETURN BOTTOM PORTION TO RECEIVE ADDITIONAL QUESTIONNAIRES

Please send _____ questionnaires to:

Name(s): _____

Street: _____

Province/State: _____

Postal Code/Zip: _____

My preferred language is:

_____ English
_____ French

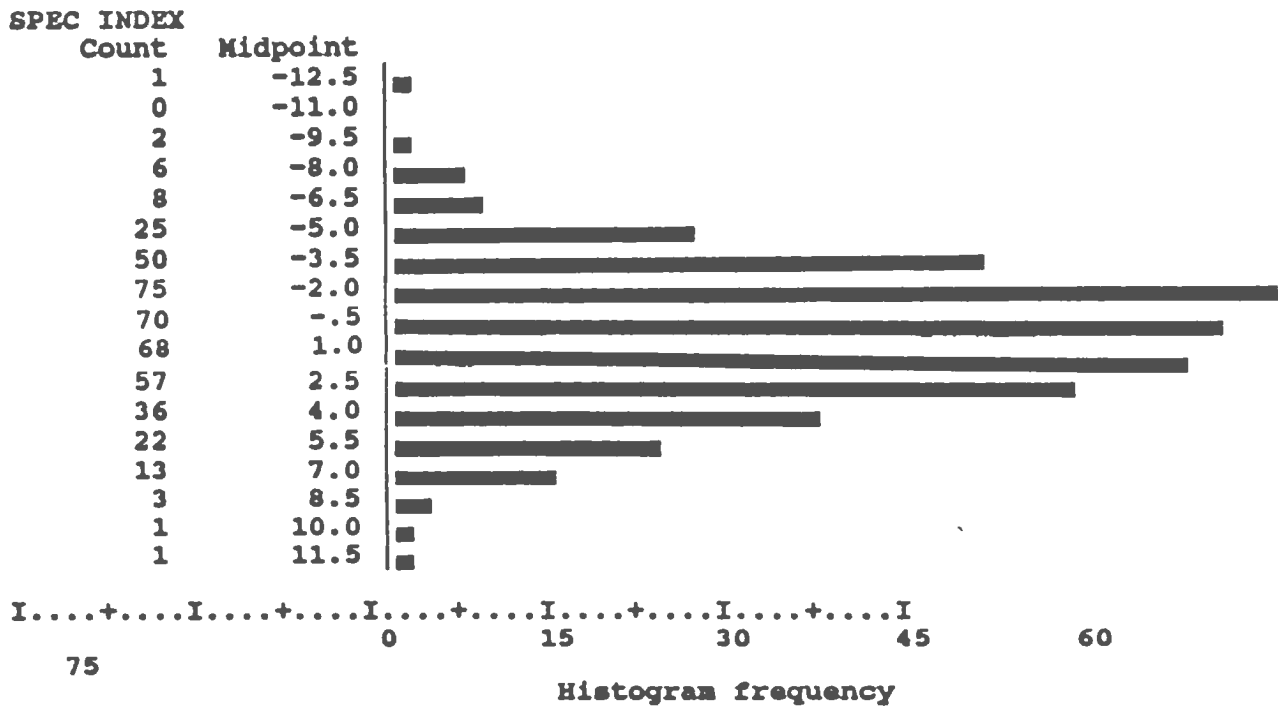
Place
stamp
here

SEND TO:

Lisa Spellacy
Dept. of Geography
Memorial University of Newfoundland
St. John's, NFLD.
A1B 3X9

Appendix D

SPECIALIZATION SCORES



SPEC INDEX

Mean	-.031	Median	-.089	Sum
-13.634				
Std err	.166	Std dev	3.468	Variance
12.028				
Range	22.912	Minimum	-11.806	Maximum
11.106				
Percentile	Value	Percentile	Value	Percentile
Value				
25.00	-2.526	50.00	-.089	75.00
2.379				
Valid cases	438	Missing cases	0	

Appendix E

SUMMARY TABLES OF SPECIALIST GROUP CHARACTERISTICS

1. Age Ranges of Specialist Groups

Age Group	SUB-GROUPS	
	Low Specialists	High Specialists
under 20 yrs	6 (5.7%)	2 (1.9%)
20 to 29 yrs	47 (44.8%)	18 (16.8%)
30 to 39 yrs	28 (26.6%)	32 (29.9%)
40 to 49 yrs	10 (9.6%)	28 (26.2%)
50 to 59 yrs	9 (8.5%)	11 (10.2%)
60 to 69 yrs	5 (4.8%)	12 (11.3%)
70 yrs or more	0 (0%)	4 (3.7%)
No response	4 (--)	2 (--)
Total	109 (100%)	109 (100%)
Mean	32.7	42.4
S.D.	11.6	13.4
Median	29.0	40.0
Range	49 (16-65)	59 (17-76)

2. Gender of Specialist Groups

Gender	SUB-GROUP	
	Low Specialist	High Specialist
Female	55 (51.9%)	30 (27.8%)
Male	51 (48.1%)	78 (72.2%)
No response	3 (--)	1 (--)
Total	109 (100%)	109 (100%)

3. Education Levels of Specialist Groups

Education Level	SUB-GROUPS	
	Low Specialists	High Specialists
some elementary	1 (1.0%)	0 (0%)
finished elementary	0 (0%)	1 (1.0%)
some high school	6 (5.8%)	3 (2.9%)
finished high school	14 (13.5%)	10 (9.5%)
some vocational	2 (1.9%)	5 (4.8%)
finished vocational	3 (2.9%)	10 (9.5%)
some university	22 (21.2%)	16 (15.2%)
finished university	27 (26.0%)	18 (17.1%)
post-graduate studies	29 (27.9%)	42 (40.0%)
No response	5 (--)	4 (--)
Total	109 (100%)	109 (100%)

4. Family Income Levels of Specialist Groups

Family Income Range	SUB-GROUPS	
	Low Specialist	High Specialist
under \$10,000	10 (10.5%)	1 (1.0%)
\$10,001-\$20,000	18 (18.9%)	7 (6.9%)
\$20,001-\$30,000	9 (9.5%)	12 (11.8%)
\$30,001-\$40,000	16 (16.8%)	12 (11.8%)
\$40,001-\$50,000	11 (11.6%)	16 (15.7%)
\$50,001-\$60,000	11 (11.6%)	9 (8.8%)
\$60,001-\$70,000	7 (7.4%)	13 (12.7%)
over \$70,000	13 (13.7%)	32 (31.4%)
No response	14 (--)	7 (--)
Total	109 (100%)	109 (100%)

5. Occupations of Specialist Groups

Occupation Title	SUB-GROUPS	
	Low Specialist	High Specialist
Student	23 (24.2%)	4 (4.4%)
Retired	5 (5.3%)	15 (16.5%)
Natural science, engineering, math.	2 (2.2%)	19 (20.8%)
Managerial, admin.& related occs.	11 (11.6%)	7 (7.7%)
Teaching & related occs.	15 (15.8%)	18 (19.8%)
Medicine & health	11 (11.6%)	3 (3.3%)
Social science & related occs.	6 (6.4%)	4 (4.4%)
Other occs.	22 (24.2%)	21 (23.1%)
No response	14 (--)	18 (--)
Total	109 (100%)	109 (100%)

6. Setting Choices of Specialist Groups

Setting Choice	SUB-GROUPS	
	Low Specialist	High Specialist
Backcountry Zone 2	17 (16.7%)	29 (27.9%)
Backcountry Zone 3	35 (34.3%)	25 (24.0%)
Frontcountry	44 (43.1%)	40 (38.5%)
Excluded Cases	13 (--)	15 (--)
Total	109 (100%)	109 (100%)

7. Primary Activities of Specialist Groups

Primary Activity	SUB-GROUPS	
	Low Specialist	High Specialist
Hiking	56 (59.6%)	28 (28.3%)
Camping	20 (21.3%)	27 (27.3%)
Other	18 (19.1%)	44 (44.4%)
Excluded Cases	15 (--)	10 (--)
Total	109 (100%)	109 (100%)

Appendix F

SUMMARY OF TYPES OF VISITOR COMMENTS

SUMMARY OF FINAL COMMENTS AND ELABORATIVE COMMENTS

Numbers from 1 - 200 = Green Point (FC) visitors

Numbers from 201 - 500 = Backcountry (BC2 & BC3) visitors

Bold Survey Numbers = Hi Specialist

Underlined Survey Numbers = Low Specialist

FINAL COMMENTS:

Total number of GP people who commented=57/198

Total number of BC people who commented=137/266

ELABORATIVE COMMENTS:

total number of GP people who commented= 55/198

Total number of BC people who commented= 168/266

ENVIRONMENT

POSITIVE:

- (106) **Scenery/ beauty enhanced:** **005, 014, 112, 251, 285**, 326, 342, 346, 349, 369, **371**, 390, **406**, 422, 431, 436, 004, **005**, 008, 016, 038, 050, **088**, 099, 100, 113, 159, **164**, **190**, **191**, 203, 205, 206, **213**, 216, 224, 226, 227, 230, 231, 232, 233, **234**, 237, 240, 242, 244, 245, **247**, 248, 249, 255, **265**, 266, 273, **276**, 281, 284, 291, **293**, 295, **300**, 301, 304, 306, 307, **310**, 313, **318**, 325, 327, **329**, **330**, 332, 339, 346, 357, 360, 362, 366, 367, 369, 372, 376, **377**, 380, 381, **382**, 383, 387, 388, 389, 392, **393**, 399, 400, **401**, 405, 408, 410, 424, 429, 432, 433, 436, 437
- (34) **Liked lack of human evidence/pristine/unspoiled wilderness:** 255, **220**, 241, 078, 206, 224, 233, 241, **247**, 281, 289, 295, 317, 337, **341**, 349, 354, 356, 369, **374**, 389, 392, 433, 256, 289, 295, 337, **341**, 349, 354, **374**, 389, 424, 433
- (4) **Liked clean air/ water:** **247**, 250, 290, 390
- (2) **Liked unmarked trail/using compass:** **213**, 372

- (46) **Liked quiet/solitude/lack of people/inaccessibility:** 207, 233, 234, 251, **256**, 278, 285, 289, 290, **316**, 323, **341**, 346, 357, 358, **385**, **404**, 136, 232, 279, 380, **213**, 216, 225, 233, 242, **247**, 273, 279, 281, 292, 295, **310**, 317, **329**, 349, 354, 356, 367, 369, 372, 380, 400, 408, 410, 433
- (20) **Ruggedness, challenging terrain enhanced:** 225, 226, 231, **234**, 244, 252, 266, **275**, 305, 306, 317, 356, 357, 389, 390, **234**, 289, 290, 292, 346
- (30) **Different/ diversity/ arctic terrain enhanced:** 014, 207, **209**, 217, 225, 226, 227, 232, 248, 249, 250, 255, 259, 279, 279, 291, 295, **300**, 304, 329, 333, 360, 366, 366, **402**, **404**, 207, 222, **316**, 305
- (6) **Enjoyed plant life:** 226, 279, **300**, 366, 390, 305
- (14) **Liked viewing wildlife:** **246**, **247**, **265**, 278, 207, 224, 226, 255, 278, 372, **394**, 400, **401**, 408
- (25) **Good weather enhanced:** 227, 242, **270**, **300**, 380, 381, 389, **394**, 410, 432, 437, 026, **142**, 143, 224, 242, **247**, **270**, **300**, 380, 381, 389, **394**, 410, 432
- (3) **Liked community enclaves:** **316**, 369, 43
- (1) **Lack of bugs enhanced:** **300**
-
- (291)

NEGATIVE:

- (4) **Terrain too challenging/did not like:** 22, 224, **247**, 360
- (16) **Bugs detracted/ not prepared for blackflies:** 011, 207, 243, **246**, **247**, 305, 391, 392, 434, 212, 222, 227, 327, **382**, 396, 397

- (29) **Poor weather detracted:** 305, 336, 258, **275**, 294, **330**, 331, **344**, 348, 353, 378, 411, 412, **001**, 002, 009, 020, 031, 258, 294, 326, **330**, 331, 348, 353, 378, **382**, 411, 412

(49)

CONCERNS:

- (15) **Concerned about human impact/ litter/ erosion/ outhouse effluent:** **221**, 222, **270**, **276**, 314, 317, 322, 323, 328, **335**, 346, 349, 366, 434, 441
- (18) **Concerned about overdevelopment/ leave untouched wilderness:** 097, **234**, 235, 242, 251, **256**, **265**, 289, 290, 308, **316**, 317, 323, 346, **374**, 390, 436, 439

(33)

FACILITIES

LIKED EXISTING FACILITIES:

- (14) **Green Point campground beautiful/ like access to water:** 072, 073, 113, 183, 188, 016, **017**, **018**, **022**, 099, 106, **164**, 183, **247**
- (25) **Liked campsite/ organization, facilities:** **088**, 106, 113, 143, 203, 230, 231, 232, 259, 278, 284, 287, 288, **293**, 337, 357, 389, 390, **401**, **402**, 403, 410, 424, **427**, 433
- (3) **Variety of sites enhanced:** 070, 071, 273
- (7) **Liked existing facilities/ showers/ firewood:** 245, **316**, **329**, 334, **335**, **420**, **409**
- (4) **Cleanliness of facilities enhanced:** 016, 250, 278, 424
- (4) **Liked lack of facilities/primitiveness:** 227, 229, 230, 357
- (1) **Liked GP self registration:** 116

(1) Liked Berry Hill set-up: 038

(59)

LIKED TRAIL CONDITIONS:

(11) Liked no trails/using compass: 207, 209, 213, 233, 234, 291, 316, 323, 341, 357, 358

(14) Enjoyed trails/ new trails/ variety of trail skill levels: 002, 027, 097, 323, 420, 291, 342, 220, 293, 310, 409, 410, 432, 433

(13) Suggest new trails/ loop trails: 097, 142, 219, 258, 280, 304, 335, 341, 353, 360, 374, 385, 410

(1) Green Gardens trail good maintenance: 424

(39)

PROBLEMS WITH EXISTING FACILITIES:

(7) Green Garden Trails not well maintained: 208, 210, 268, 387, 388, 210, 359

(2) Problems with self registration: 115, 116

(5) Poor roads, signs unclear/ too steep/ prefer pavement to gravel: 050, 052, 053, 071, 093

(12) Toilets/outhouses not clean: 007, 021, 023, 070, 071, 072, 073, 099, 141, 153, 205, 245

(2) Campsites not private enough: 103, 104

(1) Lack of RV facilities detracted: 015

(29)

WANT MORE FACILITIES:

- (7) **Want more campgrounds/ sites/ view sites: 001, 071, 073, 075, 076, 093, 142**
- (2) **Want more/better campground facilities for RVs: 001, 136**
- (4) **Would like washing facility/shower: 007, 023, 116, 137**
- (1) **Suggest shuttle facility: 239**
- (5) **Would like canoe/ kayak facilities: 154, 246, 294, 315, 433**
- (1) **Need facilities/ activities with older pop. in mind: 189**
-
- (20)

STAFF/SERVICEPOSITIVE:

- (26) **Good/ helpful/ friendly staff: 006, 017, 038, 137, 153, 255, 264, 283, 299, 342, 346, 353, 357, 358, 371, 431, 031, 229, 313, 322, 346, 357, 409, 424, 427, 433**
- (15) **Staff provided useful info./ preparation: 206, 233, 299, 315, 323, 346, 357, 369, 424, 439, 225, 283, 357, 396, 427**
- (4) **Good information enhanced: 225, 283, 357, 427**
- (3) **Rescue/ assistance appreciated: 262, 346, 358**
- (1) **Loved birdwatching questionnaire: 259**
- (7) **Liked self registration procedure: 323, 335, 346, 424, 113, 424, 427**
-
- (56)

POOR/ NOT ENOUGH/ WANT MORE INFORMATION/GUIDANCE:

- (13) **Staff uninformed (beyond routine questions):** 043, 195, 216, 220, 248, 249, 268, 305, 339, 344, 377, 430, 431
- (10) **Poor/ lack of information/ maps detracted from experience:** 212, 222, 258, 263, 264, 314, 321, 332, 344, 431
- (12) **Information/brochures not sufficiently provided/ visitor not made aware of:** 026, 043, 142, 195, 243, 244, 264, 338, 377, 430, 431, 438
- (11) **Would like more interpretation lit./ general outdoor lit.:** 213, 249, 259, 268, 321, 338, 341, 353, 357, 366, 435
- (12) **Want more self guided interpretation/ brochures/ signposts/ checklists:** 002, 027, 030, 031, 085, 141, 142, 249, 268, 329, 338, 435
- (16) **Need more/better Topo maps:** 102, 141, 206, 207, 213, 220, 222, 248, 268, 271, 332, 336, 360, 374, 422, 443
- (1) **Trail info. inadequate/ unclear/ faulty:** 027
- (7) **Trouble finding campsite:** 206, 207, 245, 255, 336, 337, 349
- (9) **Trouble finding trail/ route/ got off trail:** 213, 224, 250, 255, 266, 326, 346, 373, 394
- (24) **Would like more guidance/ warning/ equipment check/ trail description/ trail markers:** 206, 207, 224, 227, 252, 258, 266, 276, 291, 296, 297, 299, 305, 326, 337, 349, 376, 391, 392, 394, 373, 222, 258, 373
- (4) **Want more enforcement of regs.(dogs, noise, backcountry etiquette):** 136, 137, 317, 335
- (2) **Would like ski info:** 219, 341

- (1) **Would like more organized activities (eg. campfires) to meet other people: 002**

(122)

NEGATIVE:

- (4) **Location of VCR not good/ need south VCR or Wiltondale: 026, 109, 249, 403**
- (5) **Difficulty registering: 208, 271, 273, 294, 388**
- (1) **Did not like "screening"/ advice: 308**
- (1) **Boat tour operator unfriendly: 353**
- (1) **Unhappy with fishing regs.: 038, 174**

(12)

EXPERIENCE

POSITIVE:

- (77) **Enjoyed wonderful experience: 213, 232, 237, 238, 239, 251, 252, 264, 268, 275, 276, 278, 280, 303, 317, 318, 326, 337, 356, 357, 376, 377, 380, 382, 401, 430, 435, 436, 007, 050, 067, 168, 206, 207, 209, 213, 216, 222, 230, 233, 244, 245, 247, 248, 250, 251, 264, 265, 273, 276, 278, 283, 285, 290, 305, 308, 314, 316, 322, 323, 326, 328, 334, 337, 339, 344, 346, 349, 357, 366, 373, 379, 391, 392, 404, 431, 434**
- (24) **Visit lived up to/beyond expectation of enjoyment: 097, 102, 105, 142, 166, 173, 218, 219, 221, 233, 254, 264, 267, 268, 285, 301, 341, 342, 366, 381, 388, 404, 422**
- (12) **Want to/plan to return: 007, 250, 325, 326, 337, 218, 223, 251, 276, 325, 326, 374**

- (16) **Friendly/ helpful/ nice people:** 206, **221**, 242, 244, 245, 250, 259, 286, 313, 354, 359, 367, **377**, 392, 432, 433
- (1) **Proud of Canadian heritage reflected by park:** 006
- (6) **Liked questionnaire followup:** 220, 264, **275**, 313, 322, **393**
- (2) **Would like more rock climbing opportunities:** **272**, **303**
- (8) **Enjoyed rock climbing opportunities:** **271**, **272**, 387, 388, **271**, **272**, 387, 388
- (2) **Good trip planning enhanced:** 027, 283

(148)

NEGATIVE:

- (10) **Disappointing experience:** 220, 336, 349, 358, 400, 422, 430, 431, 212, 353
- (6) **More challenge than expected/ too difficult:** **221**, 222, 223, **272**, 284, 353
- (2) **Nfld. too expensive:** 015, 038
- (2) **Questionnaire too difficult/ biased against RV pop.:** 105, 174
- (9) **Presence of other people/ human impact detracted (noise, pets, litter):** 035, 359, **393**, 040, 232, 281, 296, 297, 328
- (1) **Presence of RVs detracted:** 036
- (8) **Poor trip planning limited/ too little time:** 080, **088**, 212, **276**, **080**, **276**, 304, 423

(38)

Appendix G

DISCRIMINATION ANALYSIS TABLES

Table 1 Classing BC3 with FC

Actual Group	Predicted Group Membership	
	Group 1	Group 2
Group 1 (BC2) n=105	83.8%	16.2%
Group 2 (BC3 & FC) n=256	33.2%	66.8%
missing cases n=56	---	---

Percent of "grouped" cases correctly classified: 71.8%.

Table 2 Classing BC3 with BC2

Actual Group	Predicted Group Membership	
	Group 1	Group 2
Group 1 (FC) n=119	68.1%	31.9%
Group 2 (BC2 & BC3) n=210	8.1%	91.9%
missing cases n=53	---	---

Percent of "grouped" cases correctly classified: 83.3%.

Appendix H

SUMMARY TABLES OF GROUP RESPONSES TO ENVIRONMENTAL ATTRIBUTES

Table 1 Specialist Groups' Responses to Environmental Attributes

Environmental Attribute	Low Spec.		High Spec.		F _{1,203}
	Mean	(Rank)	Mean	(Rank)	
Scenic vistas	3.81	(1)	4.03	(1)	1.91
Drinkable water	3.40	(2)	3.44	(5)	.03
Can see wildlife	3.34	(3)	3.90	(2)	12.11**
Area is new or different	3.22	(4)	3.45	(4)	1.88
Few signs of people	3.10	(5)	3.64	(3)	7.54*
Unusual Geology	2.95	(6)	3.27	(8)	3.67
Mountainous terrain	2.93	(7)	3.39	(6)	7.25*
Different vegetation	2.84	(8)	3.28	(7)	7.85*
Large animals	2.77	(9)	3.11	(9)	3.66
Help not far away	2.61	(10)	2.19	(15)	5.49*
Can see the ocean	2.59	(11)	2.44	(12)	.59
Unusual local plants	2.54	(12)	2.95	(11)	5.23*
Available firewood	2.49	(13)	1.97	(17)	7.92*
Water for swimming	2.39	(14)	2.12	(16)	2.75
National park status	2.31	(15)	2.20	(14)	.36
Challenging terrain	2.26	(16)	2.99	(10)	14.75**
Area has snow	1.50	(17)	2.25	(13)	19.84**

Notes: * p<.05

**p<.001

Means based on rating where 1 = Not Important to 5 = Extremely Important

Table 2 Setting Choice Groups' Responses to Environmental Attributes

Environmental Attribute	BC2 Mean (Rank)	BC3 Mean (Rank)	FC Mean (Rank)	F _{2,353}
Few signs of people	4.26 ^a (1)	3.99 ^b (2)	2.65 ^{ab} (11)	68.46*
Scenic vistas	4.07 (2)	4.09 (1)	3.87 (1)	1.85
Can see wildlife	4.03 ^{ac} (3)	3.71 ^{bc} (3)	3.39 ^{ab} (3)	9.86**
Area is new or different	3.65 ^a (4)	3.55 ^b (4)	3.07 ^{ab} (4)	9.21**
Challenging terrain	3.53 ^{ac} (5)	2.99 ^{bc} (9)	1.90 ^{ab} (14)	62.32**
Mountainous terrain	3.47 ^a (6)	3.55 ^b (6)	2.74 ^{ab} (9)	14.62**
Drinkable water	3.38 (7)	3.36 (5)	3.46 (2)	.19
Different vegetation	3.35 ^a (8)	3.27 ^b (8)	2.89 ^{ab} (7)	5.93*
Unusual geology	3.23 (9)	3.39 ^a (7)	2.97 ^a (6)	4.32*
Large animals	3.06 (10)	2.99 (9)	2.77 (8)	1.90
Unusual local plants	2.95 (11)	2.87 (10)	2.66 (10)	1.77
Water for swimming	2.18 ^a (12)	2.20 (11)	2.48 ^a (12)	2.63
National park status	2.15 (13)	2.06 ^a (15)	2.42 ^a (13)	2.89
Help not far away	2.05 ^a (14)	2.14 ^b (13)	2.74 ^{ab} (9)	12.83**
Area has snow	2.04 ^a (15)	2.04 ^b (16)	1.59 ^{ab} (15)	5.94*
Can see the ocean	2.02 ^a (16)	2.18 ^b (12)	3.03 ^{ab} (5)	25.79**
Available firewood	1.89 ^a (17)	2.12 ^b (14)	2.48 ^{ab} (12)	7.21**

Notes: Similar superscripts denote groups significantly different at the .05 level.

* p<.05

**p<.001

Means based on ratings where 1 = Not Important to 5 = Extremely Important

Appendix I

SUMMARY TABLES OF GROUP RESPONSES TO MANAGEMENT STRATEGIES

Table 1 Specialist Groups' Level of Support for Management Strategies

Management Option	Low Spec. Mean (Rank)	High Spec. Mean (Rank)	F _{1,203}
Revegetate overused areas	4.44 (1)	4.45 (1)	.00
Fine regulation violators	4.42 (2)	4.23 (2)	2.51
Provide info on natural beauty	4.22 (3)	4.22 (3)	.00
Require BC permits	4.08 (4)	4.05 (4)	.03
Install directional signs	4.05 (5)	3.67 (8)	6.14*
Establish trails	3.97 (6)	3.58 (10)	7.66*
Mark routes	3.87 (7)	3.55 (11)	5.61*
Limit party sizes	3.67 (8)	4.03 (5)	5.30*
Provide pit toilets	3.67 (8)	3.87 (7)	1.89
Impose trail quotas	3.56 (9)	3.88 (6)	4.87*
Provide guided expeditions	3.48 (10)	3.07 (14)	12.92**
Provide more warden patrols	3.44 (11)	3.37 (12)	.31
Provide more campsites	3.31 (12)	3.18 (13)	1.08
Restrict campfires	3.19 (13)	3.59 (9)	7.20*
Provide tentpads at primitive campsites	3.17 (14)	3.08 (15)	.35
Provide Appalachian style shelters	3.13 (15)	2.90 (17)	2.50
Permit horse use	2.89 (16)	2.26 (20)	18.94**
Establish user fee	2.85 (17)	2.94 (16)	.33
Pave access road	2.72 (18)	2.37 (19)	4.97*
Not provide trails	2.41 (19)	2.88 (18)	9.67*
Provide public access (i.e., cable car)	2.17 (20)	2.00 (21)	1.09

Notes: * p<.05

**p<.001

Means based on ratings where 1 = Strongly Oppose to 5 = Strongly Support.

Table 2 Setting Choice Groups' Levels of Support for Management Options

Management Option	BC2 Mean (Rank)		BC3 Mean (Rank)		FC Mean (Rank)		F _{2,353}
Revegetate overused areas	4.48	(1)	4.58 ^a	(1)	4.37 ^a	(1)	2.99
Fine regulation violators	4.33	(2)	4.45 ^a	(2)	4.15 ^a	(4)	3.70*
Provide info on natural history	4.27	(3)	4.22	(4)	4.18	(3)	.51
Require BC permits	4.24 ^a	(4)	4.38 ^b	(3)	3.61 ^{ab}	(8)	21.96**
Limit party sizes	4.17 ^a	(5)	3.99 ^b	(6)	3.50 ^{ab}	(11)	13.48**
Impose trail quotas	3.99 ^a	(6)	4.06 ^b	(5)	3.39 ^{ab}	(14)	17.10**
Restrict campfires	3.63 ^a	(7)	3.38 ^b	(11)	3.06 ^{ab}	(17)	9.29**
Provide pit toilets	3.45 ^{ab}	(8)	3.81 ^a	(10)	3.95 ^b	(7)	7.87**
Provide more warden patrols	3.38	(9)	3.31	(12)	3.51	(10)	1.64
Not provide trails	3.30 ^{ab}	(10)	2.35 ^a	(19)	2.27 ^b	(21)	40.21**
Install directional signs	3.25 ^{ab}	(11)	3.98 ^a	(7)	4.21 ^b	(2)	26.89**
Mark routes	3.22 ^{ab}	(12)	3.85 ^a	(9)	3.99 ^b	(6)	25.79**
Establish trails	3.17 ^{ab}	(13)	3.96 ^a	(8)	4.07 ^b	(5)	33.01**
Provide tentpads at primitive campsites	3.00	(14)	3.00	(15)	3.24	(15)	2.07
Establish user fee	2.88	(15)	2.99	(16)	2.88	(19)	.33
Provide guided expeditions	2.83 ^{ab}	(16)	3.20 ^{ac}	(14)	3.48 ^{bc}	(12)	17.58**
Provide more campsites	2.77 ^{ab}	(17)	3.27 ^{ac}	(13)	3.60 ^{bc}	(9)	26.16*
Provide Appalachian style shelters	2.65 ^{ab}	(18)	2.95 ^{ac}	(17)	3.40 ^{bc}	(13)	16.63*
Permit horse use	2.09 ^{ab}	(19)	2.46 ^{ac}	(18)	2.93 ^{bc}	(18)	21.09**
Pave access roads	2.09 ^a	(19)	2.21 ^b	(20)	3.07 ^{ab}	(16)	37.62**
Provide public access (i.e., cable car)	1.50 ^{ab}	(20)	1.83 ^{ac}	(21)	2.75 ^{bc}	(20)	47.92**

Notes: Similar superscripts denote groups significantly different at the .05 level.

* p<.05

**p<.001

Means based on ratings where 1 = Strongly Oppose to 5 = Strongly Support

